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# SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

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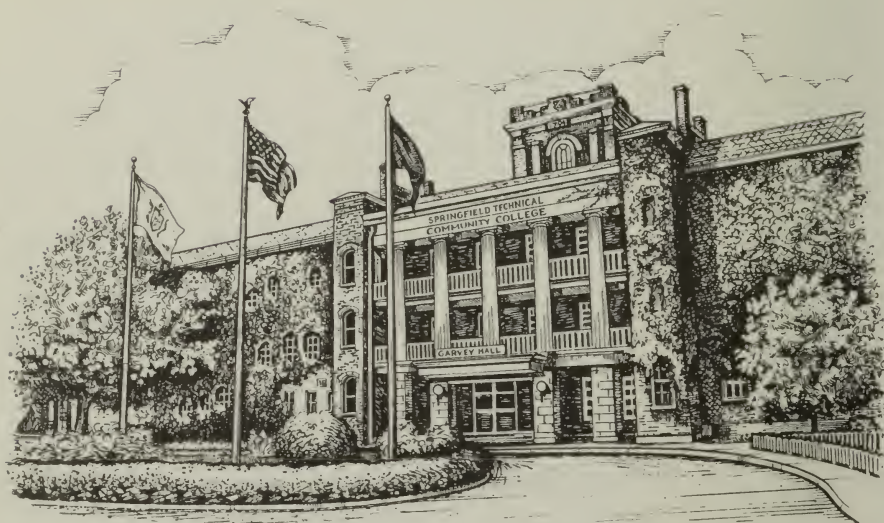
*Your First Choice*

# SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

One Armory Square  
Springfield, Massachusetts 01105

(413) 781-7822 Day Division

(413) 781-1315 Division of Continuing Education



## INFORMATION SUBJECT TO CHANGE

This catalog is published as a convenient source of information for prospective students and for the general public. To allow for unforeseen developments that may occur along budgetary or other lines, the College reserves the right to add or delete courses and programs or to revise tuition, fees, and insurance requirements described herein.

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# ACADEMIC CALENDAR

(The following dates are tentative; these calendars are subject to change without notice.)

WEEK	DATES	FALL SEMESTER 1993
1	Sept. 6-10	<b>LABOR DAY – HOLIDAY</b> <b>FACULTY MEETING 9:00 A.M.</b> Division/Department Meetings <b>LATE REGISTRATION</b> 8:00 A.M. – 3:00 P.M. <b>DROP/ADD BEGINS</b> <b>CLASSES BEGIN 7:30 A.M.</b> Students meet with advisors
	Mon., Sept. 6 Tues., Sept. 7	
	Wed., Sept. 8 Wed.-Fri. Sept. 8-10 Fri., Sept. 10	<b>DROP/ADD ENDS</b>
2	Sept. 13-17	
3	Sept. 20-24	
4	Sept. 27 – Oct. 1	
5	Oct. 4-8	
6	Oct. 11-15	Mon., Oct. 11
7	Oct. 18-22	
8	Oct. 25-29	Fri., Oct. 29
		<b>COLUMBUS DAY – NO CLASSES</b>
9	Nov. 1-5	
10	Nov. 8-12	Mon., Nov. 8 Distribution of mid-semester grades and spring 1994 registration booklet to students Wed., Nov. 10 <b>CLASSES FOLLOW A THURSDAY SCHEDULE</b> Thurs., Nov. 11 <b>VETERAN'S DAY – NO CLASSES</b> Fri., Nov. 12 <b>SPRING, 1994 PRE-REGISTRATION BEGINS</b> Students meet with faculty advisors and complete pre-registration in the Registrar's Office
11	Nov. 15-19	Sun., Nov. 21
12	Nov. 22-26	Wed., Nov. 24 <b>ALPHA NU OMEGA INDUCTION CEREMONY</b> <b>Last day to pre-register for spring, 1994 semester</b> <b>Last day to withdraw from a course without penalty</b> <b>THANKSGIVING RECESS – NO CLASSES</b>
	Thurs., Fri. Nov. 25-26	
13	Nov. 29-Dec. 3	
14	Dec. 6-10	
15	Dec. 13-17	Wed., Dec. 15 <b>LAST DAY OF CLASSES</b> <b>FINAL EXAMS</b> Dec. 16-17
16	Dec. 20-24	Dec. 20-21
	Dec. 27-31	Wed., Dec. 29 <b>FINAL EXAMS</b> <b>FINAL GRADES DUE IN REGISTRAR'S OFFICE – 12:00 Noon</b>
	Dec. 22-Jan. 24	<b>SEMESTER BREAK</b>

WEEK		DATES	SPRING SEMESTER 1994
		Mon., Jan. 17	<b>MARTIN LUTHER KING DAY – HOLIDAY</b>
1	Jan. 24-28	Mon., Jan. 24	<b>FACULTY MEETING – 9:00 A.M.</b> Division/Department Meetings
			<b>LATE REGISTRATION</b> 8:00 A.M. – 3:00 P.M.
			<b>DROP/ADD BEGINS</b>
		Tues., Jan. 25	<b>CLASSES BEGIN</b> 7:30 A.M.
		Tues.-Fri. Jan. 25-28	Students meet with advisors
		Fri., Jan. 28	<b>DROP/ADD ENDS</b>
2	Jan. 31-Feb. 4		
3	Feb. 7-11		
4	Feb. 14-18		
5	Feb. 21-25	Mon., Feb. 21	<b>WASHINGTON'S BIRTHDAY – NO CLASSES</b>
		Tues., Feb. 22	<b>CLASSES FOLLOW A MONDAY SCHEDULE</b>
6	Feb. 28-Mar. 4		
7	Mar. 7-11 Mar. 14-18	Mon.-Fri.	<b>MID-SEMESTER BREAK – NO CLASSES</b>
		Thurs., Mar. 17	<b>EVACUATION DAY – HOLIDAY</b>
8	Mar. 21-25	Fri., Mar. 25	<b>MID-SEMESTER GRADES DUE IN REGISTRAR'S OFFICE – 12:00 Noon</b>
9	Mar. 28-Apr. 1		
10	Apr. 4-8	Wed., Apr. 6	<b>Distribution of mid-semester grades and fall, 1994 pre-registration booklet to students</b>
		Thurs., Apr. 7	<b>Fall, 1994 pre-registration begins</b> Students meet with faculty advisors and complete pre-registration in the Registrar's Office
11	Apr. 11-15	Fri., Apr. 15	<b>Last day to pre-register for fall, 1994 semester</b>
12	Apr. 18-22	Mon., Apr. 18 Fri., Apr. 22	<b>PATRIOTS' DAY – NO CLASSES</b> <b>Last day to withdraw from a course without penalty</b>
13	Apr. 25-29		
14	May 2-6		
15	May 9-13	Tues., May 10	<b>LAST DAY OF CLASSES</b>
		May 11-13	<b>FINAL EXAMS</b>
16	May 16-20	Mon., May 16 Thurs., May 19	<b>FINAL EXAMS</b> <b>FINAL GRADES DUE IN REGISTRAR'S OFFICE – 12:00 Noon</b>
	May 23-27	Wed., May 25 Thurs., May 26 Mon., May 30	<b>HONORS CONVOCATION</b> <b>COMMENCEMENT</b> <b>MEMORIAL DAY – HOLIDAY</b>

## President's Message



Welcome to Springfield Technical Community College. In the College's 27th year, we are proud to look back on its growth and achievements, as the most comprehensive institution in the Massachusetts community college system. STCC offers 47 different degree or certificate programs and 23 options, to nearly 7,000 students in Day and Evening divisions. STCC offers computer hardware facilities of university level quality, and a seven-floor Biological Sciences building, gymnasium, and theater complex, among its many impressive academic buildings.

The College has a long-standing commitment to provide educational programs of the highest quality. Our major strength lies in our ability to attract faculty and staff committed to the goals and objectives of the College and dedicated to responding to the needs of our students through personalized attention. The College's faculty combine a high degree of theoretical knowledge with practical experience in their field. Our staff are dedicated to making your stay with us a rewarding and enjoyable experience.

This, combined with the diversity of our program offerings, our central location on the beautiful and historic Springfield Armory grounds, and our professional commitment to maintain excellence, combine to make Springfield Technical Community College the finest institution of its kind. An added dimension to enrich your college years are extracurricular activities such as athletics, drama society, and a wide variety of student organizations.

We are prepared to provide you with the educational background and support services so vital in today's fast-paced society.

Once you become part of the STCC family, the relationship does not end when you graduate. As an alumnus, you have ready access to Placement services, the STCC Library, and the Counseling Center, as well as becoming a member of the STCC Alumni Association. Courses and workshops offered by the Division of Continuing Education are designed to help you keep pace with the rapidly-changing skills and knowledge in your field.

We are your community college, and we are here to serve your needs.

Andrew M. Scibelli,  
President

# General Information

## THE COLLEGE

### HISTORY

Springfield Technical Community College is located on the 55-acre Springfield Armory National Historic Site. In 1789, George Washington selected this site on the bluff overlooking the river for the nation's first arsenal; the Springfield Armory was established in 1794 by an Act of Congress. The land had been used as a training field for militia since the 1600s, and by the 1780s was a major ammunition depot. In January of 1787 Daniel Shays led his ill-fated rebellion down the Bay Path, now State Street, attempting to capture the military stores in protest of heavy taxes following the Revolutionary War.

In its 174-year history, Springfield Armory was the center for research, development, and manufacture of most of the small arms that American soldiers depended on, including the legendary Springfield Rifle and the M1 Garand. After World War Two, production decreased, and in 1964 the decision was announced to phase out the Armory.

In that same year, Springfield Technical Institute was established by the City of Springfield on the grounds of the former Trade High School, and was operated jointly by the Springfield School Committee and the Massachusetts Department of Health, Education, and Welfare. The Institute was flooded with more applications than it could handle in a limited space, and the plans to decommission the Armory provided a solution.

In the summer of 1967, STI moved into three buildings on the Armory grounds, and opened in September under the jurisdiction of the Massachusetts Board of Regional Community Colleges. In April, 1968 the Armory was officially closed, and in August of that year, the Institute's name was changed to Springfield Technical Community College.

An initial enrollment of 400 students and a faculty of 20 began what is now one of the largest and most comprehensive community colleges in the Commonwealth, serving an increasingly diverse population. Over the last quarter century, the open-door policy of the College has provided opportunity for education to adult learners, growing minority populations, veterans, international students, single parents, employees needing retraining, the disabled, disadvantaged, and senior citizens wishing to continue their education, as well as the traditional college student, the recent high school graduate.

Today, the grounds are shared by the federal and the state government. The 20 acres under the jurisdiction of the National Park Service contain the Armory Museum and the former commanding officer's quarters, now NPS administrative offices. The remaining 35 acres comprise the campus of STCC, a combination of old brick buildings, the oldest dating to 1808, and new modern structures of classrooms and labs. Facilities for the humanities, nursing, health and human services, engineering, and engineering technologies are surrounded by a distinctive iron fence cast in the mid-1800's from old cannon.

Scibelli Hall, our newest facility, accommodates the following: administrative computer center, athletics, biological sciences, business administration, cafete-



ria, computer information systems, conference center, exercise room, 250-seat auditorium, gymnasium, office administration department, student computer labs, and telecommunications technology.

Springfield Technical Community College is continuing the Springfield Armory's tradition of excellence. The Armory had a lasting impact on industrial progress in the areas of interchangeable parts, quality control, and assembly line production. Today, STCC students working with lasers and computer integrated manufacturing, meet the challenges of an increasingly complex world.

## **GOVERNANCE**

In 1947 the Massachusetts Board of Education determined that the Commonwealth should establish a system of community colleges, and in 1958, the Massachusetts Board of Regional Community Colleges was created to oversee the master plan for the development of this system. There are now 15 Massachusetts community colleges, of which STCC was the 12th one established.

On March 1, 1981, the Massachusetts Board of Regents of Higher Education assumed responsibility for all the Commonwealth's public institutions of higher education. On September 1, 1991, the Higher Education Coordinating Council was created to replace the Board of Regents. For a listing of the Council members, see page 274.

On March 1, 1981, the Springfield Technical Community College Board of Trustees was created, replacing the STCC Advisory Board. Together with the Higher Education Coordinating Council, the Board is the governing body of the College. The eleven-person Board of Trustees includes one member representing the alumni of the College, and one student member elected each year by the student body. For a listing of Trustees, see page 273.

## **MISSION**

Springfield Technical Community College is the only co-educational, public, technical community college in the Commonwealth. It is dedicated to the community college concept: an open-door policy for a diverse population; quality education at low cost; and excellence in teaching. Furthermore, STCC, as a community college, is responsive to the community's need for technical and career programs in business, computer science, computer information systems, engineering, health/human services, nursing, and technologies, as well as for university parallel courses on the freshman and sophomore levels for students who transfer to senior institutions. With its unique and diversified array of programs in high technology and health sciences, the College serves as the Western Massachusetts Technology Education and Technology Transfer Center. Building on its principal mission of offering associate degree education, the College plans to provide baccalaureate programs in Engineering Technology and Medical Health Sciences. Finally, Springfield Technical Community College serves as a center for the cultural and civic life of the community.

## **PHILOSOPHY**

Springfield Technical Community College strives to meet the changing needs of the community through the commitment of its faculty, administration, staff, trustees, and students. We believe that the College must assist students in their

choice and preparation for careers; encourage performance to meet the highest professional standards, and provide opportunities for continuing educational and professional enrichment. At the same time, the College strives to develop and foster an understanding of scholarship through the liberal arts and sciences.

Education contributes to the quality of life and living. It is accomplished through efforts to develop in students the capacity for critical thinking; the ability to communicate effectively; an appreciation of the arts, sciences, and humanities; and an understanding of the technological basis of modern society. The College recognizes the need for students to deal with the rapid pace of change and such global concerns as those related to environment, population, and international relations.

Springfield Technical Community College aims to assist in the development of people who are educated in mind, sensitive to ethical concerns, responsive to civic and social obligations, capable of adjusting to change, and able to respond creatively to the demand of their chosen careers.

## **GOALS**

Based on its mission statement and philosophy, the goals of Springfield Technical Community College have been defined as follows:

1. To make high quality, low cost, higher education available to all, with emphasis on minorities, on the economically or educationally disadvantaged, particularly those whose previous exposure to the educational process has been unproductive, and on women returning to the work force and on adults who must embark on a new career or upgrade on old one;
2. To anticipate and meet the needs of the community, the Commonwealth of Massachusetts, and the nation for competent and educated workers in Business, Computer Science, Computer Information Systems, Engineering, Health/Human Services, Nursing and Technologies by offering associate degree education programs in these disciplines and by providing baccalaureate programs in Engineering Technology and Medical Health Sciences;
3. To provide technical courses for students who wish to gain competence in specific careers and for employed workers who wish to upgrade their skills or move into another level/field of employment;
4. To provide university parallel courses of high academic quality on the freshman and sophomore levels for students who will transfer to senior institutions;
5. To prepare students for effective personal and community living by including in degree programs academic and cultural courses outside the area of their career;
6. To provide credit and non-credit courses for continuing education on a full- or part-time basis and a program of community service activities;
7. To maintain the highest possible educational standards in all programs;
8. To provide opportunities for developmental study which will improve skills and attitudes so that success in a program may become possible;

9. To provide students with guidance, counseling, health services, financial aid, quality student life, intercollegiate sports, student needs under the American With Disabilities Act of 1992, and other services not included in academic programs;
10. To ensure a faculty commitment to excellence in teaching;
11. To remain committed to the affirmative action plan of the College;
12. To serve as a center for the cultural and civic life of the community;
13. To provide measures of institutional effectiveness which ensure appropriate assessment and evaluation of college programs, services, and student achievement;
14. To maintain a physical plant which will facilitate the accomplishments of the goals of the College, and to honor the College's entrustment with a portion of the Springfield Armory National Historic Site by providing maintenance, historic preservation, and accessibility of that site to citizens of the Commonwealth and the nation.

## **ACCREDITATION**

Springfield Technical Community College is accredited by the New England Association of Schools and Colleges, Inc., a non-governmental, nationally recognized organization whose affiliated institutions include elementary schools through collegiate institutions offering post-graduate education.

Accreditation of an institution by the New England Association indicates that it meets or exceeds criteria for the assessment of institutional quality periodically applied through a peer group review process. An accredited school or college is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the New England Association is not partial, but applies to the institution as a whole. As such, it is not a guarantee of the quality of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding the status of an institution's accreditation by the New England Association should be directed to the administrative staff of the school or college. Individuals may also contact the Association:

Commission on Higher Education  
New England Association of Schools and Colleges  
The Sanborn House, 15 High Street  
Winchester, Massachusetts 01890  
(617) 729-6762

The College is approved by the Board of Collegiate Authority, Massachusetts Department of Education; by the Massachusetts Rehabilitation Commission; by the United States Office of Education for listing in the Directory of Higher Education; for the National Defense Student Loan Program; for federal assistance from any unit of the Department of Health, Education, and Welfare; by



the United States Veterans Administration for the admission of veterans and war orphans; by the United States Department of Justice as a place of study for non-immigrant students; and by the United States Internal Revenue Service as a non-profit organization.

Individual programs in the Health/Human Services Division are accredited as follows:

Clinical Laboratory Science: Committee on Allied Health Education and Accreditation of the American Medical Assoc.; National Accrediting Agency for Clinical Laboratory Sciences

Dental Assistant: Commission on Dental Accreditation of the American Dental Association

Dental Hygiene: Commission on Dental Accreditation of the American Dental Association

Medical Assistant: Committee on Allied Health Education and Accreditation of the American Medical Association

Nuclear Medicine Technology: Committee on Allied Health Education and Accreditation of the American Medical Association

Nursing: National League for Nursing; approved by the Massachusetts Board of Registration in Nursing

Physical Therapist Assistant: American Physical Therapy Association

Radiation Therapy Technology: Committee on Allied Health Education and Accreditation of the American Medical Association

Radiography: Committee on Allied Health Education and Accreditation of the American Medical Association

Respiratory Care: Joint Review Committee of Respiratory Therapy Education, which cooperates with the Committee on Allied Health Education and Accreditation of the American Medical Association

Surgical Technology: Joint Review Committee on Education for the Surgical Technologist of the Committee on Allied Health Education and Accreditation of the American Medical Assoc.

## **COOPERATING COLLEGES OF GREATER SPRINGFIELD**

The Cooperating Colleges of Greater Springfield, Inc. is an educational consortium composed of the eight public and private colleges in the Greater Springfield area: American International College, Bay Path College, Elms College, Holyoke Community College, Springfield College, Springfield Technical Community College, Western New England College, and Westfield State College. Founded in 1971, the organization fosters the sharing of programs, talents, and facilities, to bring to this area the educational resources of a university while retaining the initiative and vitality of independent institutions.

Through cooperative planning at the presidential level and the functioning of committees from different administrative levels, CCGS aims:

- to enrich the educational offerings, cultural events, and social activities of the colleges,
- to offer a wide variety of programs and fields of study to students at each institution,
- to effect fiscal economies and to eliminate unnecessary duplication through joint planning, and



- to develop into an economic and educational resource to the Greater Springfield community.

Examples of the different levels on which the colleges meet and cooperate are committees composed of the presidents, the deans of faculty, the deans of students, the librarians, the public relations directors, and the student activities directors, among others.

### *I. Presidents*

The presidents speak with a united voice for higher education in the Greater Springfield area through their monthly meetings, and support area-wide projects for community development, through such organizations as the Education Opportunity Center and the Chamber of Commerce.

### *II. Academic Exchange*

Cross registration has been established so that in each semester or term, any CCGS student attempting at least six semester hours in a degree program may enroll at another college for any regular-term course that is not offered at his or her own institution, as long as the desired course is not over-subscribed. No payment of additional tuition is required. Study at the host institution is scheduled as part of the student's normal credit load, and all records for such academic achievement are kept by the registrar of the student's home college. This cross-registration includes an Army ROTC program, and an Air Force ROTC program. For more information on the Army ROTC program, call Western New England College at 782-1332; for information on the Air Force ROTC program, call the University of Massachusetts at 545-2451. The academic deans also sponsor faculty development conferences with nationally-prominent speakers.

### *III. Libraries*

All students and faculty of CCGS colleges have immediate access to the full library collections of all eight colleges, numbering 1,174,420 volumes at last count, thus greatly expanding the opportunities for independent study and research. The Cooperating Libraries of Greater Springfield also include the Springfield City Library, the Western New England Law School Library, and the Baystate Medical Center Library. The CLGS librarians have compiled a union list of serials, listing periodicals available in all libraries. A valid STCC I.D. is required in order to borrow materials from any CLGS library. For further information, please see the section in this catalog on The Library (page 47).

### *IV. Student Activities*

The Student Activities directors meet to discuss jointly sponsored educational, cultural, and social programs. The member colleges open some of their extra-curricular events to all CCGS students. Events scheduled at individual institutions may be publicized among the member colleges; in this way, programs which a single institution might not be able to attract are made available.

## **STATEMENT ON RACIAL, ETHNIC, AND RELIGIOUS HATRED**

The All-College Council of Springfield Technical Community College condemns any deliberate action which promotes racial, ethnic, or religious hatred. We

believe that such hatred undermines the goals of education and efforts to build a more just and humane society.

### **POLICY IN SUPPORT OF PLURALISM**

Students, faculty, staff, and visitors must be free from conduct that has the purpose or effect of interfering with an individual's academic or professional performance and creating an intimidating, hostile, or demeaning educational or employment environment. As such, the College has a policy of unequivocal condemnation of ethnic, religious, cultural, or racial intolerance, whether it be based on any of the aforementioned, handicap status, sex or sexual orientation.

### **POLICY CONCERNING SEXUAL HARASSMENT**

Sexual harassment is a form of sex discrimination. Sexual harassment of a student, an employee, or any other person in the College community is unacceptable, impermissible, and intolerable, not only because it is against the law, but because it is contrary to the mission of the College.

Further information or questions on either of the above College policies should be directed to the Affirmative Action Officer of STCC.

## **Admissions Information**

### **ADMISSION**

Springfield Technical Community College encourages applications without regard to race, color, national origin, age, gender, religion, disability, or sexual orientation. Admission to the College requires a high school diploma or its equivalent. A student who does not have a high school diploma or equivalent may be admitted only with non-degree status, and will be ineligible for financial aid.

Every consideration will be given to any applicant who possesses a diploma without regard to the curriculum pursued in high school. The applicant should take note, however, of the numerous requirements demanded by specialized college programs (see Prerequisite page).

A high school equivalency diploma (General Education Development Test-GED) may be earned by passing tests administered by the College several times each year. Further information about the tests may be obtained from the Division of Continuing Education.

*Students are advised to carefully study special requirements that are established by the program into which they seek admission.*

Some programs of the College require specific minimum scores to be achieved by the applicant on the Scholastic Aptitude Test (SAT) of the College entrance Examination Board. Admissions Telephone Number: 781-7822, Extension 3855.

### **APPLICATION PROCEDURE**

Students desiring admission to the College may obtain an application by writing to the Admissions Office, Springfield Technical Community College, One

Armory Square, Springfield, MA 01105. Students attending high schools in the Greater Springfield area may expedite the application process by asking their guidance departments for an application form. Applications should be filled out completely and returned to the STCC Cashier's Office as soon as possible. This application must be accompanied by a non-refundable application fee in the amount of \$10 for in-state students or \$35 for all out-of-state or foreign students in check or money order payable to STCC. This is a required fee which goes directly into the General Fund of the Commonwealth. It is each applicant's responsibility to insure that a transcript of his/her high school grades is sent to the STCC Admissions Office. The Admissions Office cannot accept the responsibility for obtaining transcripts. Any student who has been absent from STCC for seven years or more must re-submit transcripts and other credentials deemed essential by the Admissions Office.

Springfield Technical Community College maintains an open-door admission policy. However, the rapidly increasing number of applicants and the requirements of competitive programs necessitate early application for admission. Applicants should have their applications on file as early as possible, preferably before January 31 for the subsequent academic year. Applications received after January will be processed, and acceptance to desired programs will be based on available space.

In addition, transcripts from all colleges previously attended must be submitted to the College. Applications cannot be processed until all transcripts are received.

## **APPOINTMENTS FOR INTERVIEWS**

Although interviews are not required, applicants are encouraged to seek help with career choices by exploring various programs with the counselors and staff. Interviews and tours may be arranged by phoning or by writing the Admissions Office for an appointment; Telephone 781-7822, Extension 3855.

## **OUT-OF-STATE AND INTERNATIONAL STUDENT INFORMATION**

Because of the lengthened processing time, out-of-state residents, as well as all non-United States residents, must have all application materials complete and on file with the STCC Admissions Office prior to August 1 in order to be considered for admission to the Fall semester (December 1 for admission to the Spring semester).

Prospective students who are neither United States citizens nor in the United States on permanent visas must have taken the Test of English as a Foreign Language (if English is not the primary language spoken in their country) and have the test score entered as a part of their application for admission. Those who score below 525 on the TOEFL may enroll only for classes entitled English as a Second Language (ESL). Students applying for ESL courses only, are not required to take the TOEFL.

## **PLACEMENT TESTING**

As part of the admission process at STCC, incoming students are required to take English, mathematics, and reading placement examinations. Results of the placement tests are used to advise and schedule students into appropriate



courses. Placement testing is required before registering for classes. No credit is awarded on the basis of placement examinations.

Placement examination exemptions apply to:

1. Students transferring equivalent college-level coursework into STCC from an accredited post-secondary institution; course transfer requires a grade of "C" or better.
2. English as a Second Language program students who will continue to participate in appropriate ESL assessments.
3. Students having valid mathematics, English writing, and reading examination scores which are two years old or less.
4. Students who have satisfactorily completed coursework in English and mathematics at STCC. When necessary, courses completed and grades earned will be jointly evaluated by the Admissions Office and the appropriate academic department.

Placement examinations are administered by the Assessment and Individual Learning Center located in Building 17, Room 425. Questions should be directed to the Admissions Office or the Assessment Center.

## **IMMUNIZATION LAW**

Chapter 76, section 15C of the General Laws of the Commonwealth of Massachusetts requires that ALL COLLEGE STUDENTS TAKING 12 CREDITS OR MORE AND BORN IN 1957 OR LATER, AND ALL STUDENTS IN A HEALTH FIELD must present a medical certificate indicating that they are immune to measles, mumps, rubella, tetanus, and diphtheria in order to register for classes.

Any combination of three or more doses of DPT, DT, Td, is acceptable provided the last dose was administered within ten years. If not previously immunized, three doses are required. The time interval between the first and second doses is two months, with a third dose a year later.

Measles/Mumps/Rubella (MMR) vaccine is required if immunity is lacking for any one of these diseases. If vaccine is not given, TITRE must be done to prove immunity. Documented proof of MMR must be after January 1, 1966 for Massachusetts students, and after January 1, 1968 for non-Massachusetts students. Having had rubella, measles, or mumps disease does not prove immunity. It is required that all entering college students born after 1956 should have TWO doses of live measles vaccine or a repeat MMR, the first dose being after 12 months of age.

All Allied Health students are required to have Hepatitis B vaccine or report of Immune Titre.

In addition, students in health programs, Human Services Associate, and Early Childhood Education are required to submit documentation of a current Tuberculin Mantoux test. NOTE: If Mantoux test is (or has been) positive, a chest x-ray is required.



## **TRANSFER INTO STCC**

Applicants who have had previous college experience must submit all college transcripts whether or not they are seeking transfer credit. In order to meet the residency requirements, a minimum of 15 credits required in the degree program must be taken at STCC to receive a degree. The remainder may be taken at other institutions. Only courses in which the student has received a "C" grade or better and which are similar in content to those required in the student's program at STCC will be accepted. Transfer applications are usually accepted for admission to the College in both September and January; however, the number of programs open for admission in January is limited. Please contact the Admissions Office for more information.

## **DEPARTMENT/PROGRAM CHANGES**

Students wishing to change their program or department should do so only after considerable thought and counsel. To initiate a program change, students must obtain an Intra-College Transfer application from the Admissions Office.

Consultation with the faculty advisor, an admissions counselor, or the career counselor is recommended to ensure that prerequisites for admission to the new program have been satisfied, before submitting the application to the Admissions Office. The application should be submitted to Admissions no later than December 31 for the following fall term. Applications are reviewed by Admissions, and notifications of decisions mailed to students.

## **RE-ADMISSION**

Any student who has been dismissed for academic deficiencies may be re-admitted by bringing his cumulative quality point average (CQPA) up to the minimum standard required by the College (See Academic Standing). Any student who has attended summer or evening school and has raised his CQPA to the acceptable level, must complete an incoming student application.

## **FRESH START STATUS**

Students returning to STCC after a separation of at least two years will be eligible to apply for Fresh Start Status. A student who applies for the Fresh Start option will have his or her previous academic record treated as if it were the record of a transfer student, thereby allowing the student to begin a new quality point average. Therefore, all prior STCC credit which meets both degree and grade requirements of the student's current program will be changed to a grade of "P".

## **CLEP AND CHALLENGE EXAMINATIONS — ADVANCED PLACEMENT**

The College may award up to 45 credits to persons who successfully complete examinations in specific subject areas given at the College under the aegis of the College Level Examination Program (CLEP), or a series of Challenge Exams developed by the College.

The CLEP subject examinations cover a wide range of disciplines and allow applicants to demonstrate proficiency in areas where they have acquired knowledge through non-traditional learning situations. Credits received by

CLEP examinations allow the College to waive introductory courses which the student would normally be required to take.

The College has produced challenge examinations in subject-matter areas not found in the CLEP battery so that people who wish to demonstrate competence in specialized areas may do so. Students who feel that they possess above average competence in a subject area should not hesitate to consult the STCC Testing Coordinator at extension 3867 for further information, consultation and testing.

High scores on the Advanced Placement Examination of the College Entrance Examination Board will be evaluated by Admissions. Specific scores as approved by the College may allow the student applicant to be exempted from certain courses.

## **COMMUNITY CONNECTIONS**

### **2 + 2 ARTICULATION/TECH PREP PROGRAM**

Students from a number of local school systems, including Springfield, Chicopee, Pathfinder Regional and several others, may be able to receive college credit for some of their high school courses, under terms of 2+2 articulation agreements.

STCC is also a member of Tech Prep West, a consortium of community colleges and vocational/technical schools in the region. Through this program, high school students can begin taking Tech Prep courses in math, science, and English in their junior year that will specifically prepare them for a smooth transition into over 15 associate degree career programs at STCC.

For more information about both programs, call the 2+2/Tech Prep office at 781-7822, extension 3160.

### **PIONEER VALLEY A.H.E.C.**

The Area Health Education Center (AHEC) of the Pioneer Valley, an affiliate of STCC, is located in Garvey Hall South, Room 204. Developed at the federal level, the Pioneer Valley AHEC is now primarily funded by the Massachusetts Higher Education Coordinating Council. The organization is one of six AHECs in the commonwealth of Massachusetts, and serves Hampden, Hampshire, and Franklin counties.

The Pioneer Valley AHEC serves two major functions: developing and implementing health promotion training/service programs, and recruiting minorities into health professions. Health promotion training/service programs are established through a network of area colleges and universities, as well as community agencies. The programs, which are funded by the Pioneer Valley AHEC, generally involve the placement of health professions students in community-based agencies for part of their training. The students provide various health services, so that health training and service needs are matched.

The minority recruitment objective is achieved through two REACH (Recruitment Education and Assistance for Careers in Health) programs located in Holyoke and in Springfield. The Springfield program is located at STCC, in Room 379 of Garvey Hall. The Holyoke program is located at the Dr. Marcella Kelly School.

Both AHEC/REACH programs expose minority junior and senior high school students to information about and assistance toward careers in health.

# Minimum Prerequisites for Admission

Program	Math	Science	Other Academic Area	Additional Requirement	Degree or Certificate Awarded	License or Affiliation Possible
Automotive Technology	Algebra 2	Physical			Degree	
Bio-Medical Instrumen.	Algebra 2	Physical			Degree	
Business Administration						
Accounting	Algebra 2*				Degree	
Finance	Algebra 2*				Degree	
Management	Algebra 2*				Degree	
Option: Small Bus. Mgt.	Algebra 2*				Degree	
Marketing	Algebra 2*				Degree	
General Business	Algebra 2*				Degree	
Option: Trans. Comp.	Algebra 2*				Degree	
Civil Engineering Tech.	Algebra 2	Physical			Degree	
Clinical Lab. Science	Algebra 2	Bio. & Chem.***	SAT		Degree	Nat'l. registration
Computer Information						
Systems/Data Process.	Algebra 2*				Degree	
Option: Micro. Spec.	Algebra 2*				Degree	
Computer Sys. Eng. Tech.	Algebra 2	Physical			Degree	
Cosmetology					Certificate	State license
Cosmetology Mgmt.				State license	Degree	
Court Reporting			Typing 60 WPM**	SAT*	Degree	NSRA, CSR/RPR/CM
Dental Assistant		Biology***	Typing		Certificate	ADAA Natl. Cert.
Dental Hygiene	Algebra 1, Geometry or Algebra 2	Biology & Chemistry***		SAT	Degree	ADAA Natl. Bd. NE Regional Bd.
Diagnostic Med. Son.	Algebra 2	Bio. & Chem.***		SAT	Degree	Natl. certificate
Drafting Technology	Algebra 1	Physical			Certificate	State license
Early Childhood Educ.					Degree	Nat'l credential Child Dev. Assoc.
Electrical/Robotics Tech.	Algebra 2	Physical			Degree	
Electronic Sys. Eng. Tech.	Algebra 2	Physical			Degree	
Energy Systems Tech.	Algebra 2	Physical*			Degree	Certificate 2nd class license
Eng. & Science Transfer				SAT		Degree
Option: Comp. Sci. Tran.	Alg. 2 & Trig.	Chem. & Physics		SAT		Degree
Option: Science Trans.	Alg. 2 & Trig.	Chem. & Physics		SAT		Degree
Environmental Tech.	Algebra 1	Chemistry*			Degree	Certification
General Studies					Degree	
Graphic Arts Technology						
Option: Commer. Art	Algebra 1	Physical			Degree	
Option: Printing Tech.	Algebra 1	Physical			Degree	
Human Services Assoc.				SAT*	Degree	Natl. Org. of Hum. Serv. Educ.
				"C" average in major subjects		
Landscape/Plant Science	Algebra 1	Physical			Degree	
Laser Electro-Optics Tech.						
Option: Laser Appl.	Alg. 2 & Trig.	Physical			Degree	
Option: Photonics	Alg. 2 & Trig.	Physical			Degree	
Option: Opt. Fab. & Test.	Alg. 2 & Trig.	Physical			Degree	
Law Enforcement/Crim. Jus.					Degree	
Liberal Arts Transfer	Algebra 2*				Degree	



Program	Math	Science	Other Academic Area	Additional Requirement	Degree or Certificate Awarded	License or Affiliation Possible
Mechanical Eng. Tech. Option: CIM	Algebra 2	Physical			Degree	
Option CAD/CAM	Algebra 2	Physical	Mech. Drawing		Degree	
Medical Assistant					Degree	Nat'l. certificate
Nuclear Medicine Tech. Option: Adv. Standing	Algebra 2	Bio. & Chem.***	SAT		Degree	2 Nat'l. cert.
Nursing	Algebra 2	Bio. & Chem.***	SAT		Degree	R.N.
Occup. Ther. Asst.	Algebra 2	Bio. & Chem.***	SAT		Degree	Nat'l. certificate
Physical Ther. Asst.	Algebra 2	Bio. & Chem.***	SAT		Degree	
Radiation Therapy Tech.	Algebra 2	Bio. & Chem.***	SAT		Degree	Nat'l. certificate
Radiography	Algebra 2	Bio. & Chem.***	SAT		Degree	Nat'l. certificate
Respiratory Care	Algebra 2	Bio. & Chem.***			Degree	
Surgical Technology		Bio. & Chem.***			Degree	Nat'l. certificate
Office Administration						
Clerical Office Asst.					Certificate	
Executive Off. Admin.					Degree	NSA, IWP, CIS, CPS
Legal Off. Admin.					Degree	NSA, IWP, CIS, CPS Exam, PLS Exam
Medical Off. Admin.					Degree	NSA, IWP, CIS, CPS
Word Process. Mgmt.					Degree	IWP, NOMA, AMA
Telecommunications Tech.					Degree	

\* Not mandatory but recommended

\*\* This requirement may be fulfilled by successful completion of a typing test prior to enrollment

\*\*\* This requirement must include labs

Note: The physical science requirement may be filled by a course such as physics, chemistry, earth science, astronomy, oceanography, or similar.

Information as of June, 1993.

## Tuition and Fees

### TUITION

The Commonwealth of Massachusetts has set tuition at \$40 per credit for State residents and \$188 per credit for non-residents. The charge for auditing a course is set at \$21 per course. Under an agreement among the New England States, students from any of the six states may attend college in another of the six states for \$60 per credit, provided that the program desired is not available in their state or that the community college is closer than that in the home state.

Tuition and fees listed above are those as of June, 1993, and are subject to change without further notice.

### PAYMENT OF BILLS

All tuition and fees are payable before each semester begins. If payment is to be made by agencies or scholarship programs, arrangements must be made in advance with the Business Office. All student financial obligations must be satisfied before a student is considered properly registered. No grades, transcripts, recommendations, degrees or other services will be provided to students with outstanding financial obligations.



## **GENERAL EDUCATION FEE**

The General Education Fee replaces several other fees that were in existence in prior years. The fee is charged on a per credit basis, and the revenue is used to support the College's health services, library, graduation services, and academic programs as well as general College operations and services.

## **HEALTH AND EDUCATIONAL FACILITIES AUTHORITY (HEFA) FEE**

It is the College's intention to negotiate a HEFA loan to finance a capital project. If this project materializes, a per credit fee will be charged to each student to finance the repayment of the HEFA loan. The fee will be waived by the College until such time that the capital project is initiated.

## **HEALTH INSURANCE**

The Commonwealth of Massachusetts, effective September 1, 1989, requires each student carrying nine credits or more to participate in the student health insurance program. The annual premium is \$450 (\$300 for spring enrollment). If a student has comparable coverage and wishes to waive participation in the Massachusetts Community College insurance plan, the student must complete a written waiver form showing comparable coverage.

## **SENIOR CITIZEN TUITION EXEMPTION**

There shall be no charge for tuition to any Massachusetts resident 60 years of age or over for attending Springfield Technical Community College provided that the College is not over-enrolled. However, certain fees may still be charged. This tuition exemption policy also applies to evening and summer courses provided that the course has enrolled a minimum of twelve regular paying students, and that there are seats available. Students wishing to take advantage of this tuition waiver will be required to provide documentation (such as a driver's license) showing proof of age and residence in Massachusetts.

## **DETERMINATION OF RESIDENT STATUS**

An in-state student is defined as an American citizen or a permanent alien resident who has lived in Massachusetts for 6 continuous months with the intention of living in the state indefinitely.

Tuition for out-of-state residents and international students is \$188 per credit. Any person attending the College with a student visa must pay out-of-state tuition.

## **NEW ENGLAND REGIONAL STUDENT PROGRAM**

The New England Regional Student Program enables New England residents to enroll in out-of-state public colleges and universities in the six-state region (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont) at reduced tuition rates, for certain degree programs that are not offered by their home-state public institutions. The purpose of the program is to expand opportunities in higher education for New England residents by facilitating access to programs not commonly offered at every institution. This practice tends to reduce duplication of courses, and to utilize most efficiently the higher educational facilities in each state.

For detailed information, contact the STCC Admissions Office, any high school guidance counselor, or the New England Board of Higher Education, 45 Temple Place, Boston, MA 02111, (617) 357-9620.

## **TUITION REFUNDS**

Tuition refunds are made only to those students who officially withdraw from the College. In order to do this, a student should personally, or by written communication, notify the Registrar of his decision. The College will, thereupon, refund a portion of the student's tuition according to the following schedule established by State Regulations:

Withdrawal during first week	90 percent
Withdrawal after one week	70 percent
Withdrawal after three weeks	50 percent
Withdrawal after four weeks	No Refund
All refunds take approximately six (6) weeks.	

It should be noted that no provision is made for refunds of any other fees or charges except for tuition.

For some students receiving Title IV financial aid, federal government regulations dictate a pro-rata refund policy which differs from the above. For more information contact the STCC Financial Aid Office.

## **PARKING FEE**

Parking is limited on campus. Parking fees will be established each year. Off-campus parking is available near the College for varying prices.

## **BOOKS AND SUPPLIES**

Estimated costs for books and supplies vary by department, but \$175 per semester should pay for most books and supplies. The College bookstore, operated by an outside concern, provides, at reasonable costs, many of the items that students require during their stay at STCC.

## **SUMMARY OF TUITION AND FEES**

The financial requirements of STCC, changing costs, state and legislative action, and other circumstances may require adjustments in the tuition and fees stated or estimated below. The College reserves the right to make such adjustments in these charges as may from time to time be required by the Higher Education Coordinating Council or the Board of Trustees. Students acknowledge this reservation by submitting applications or by registering for classes.

Application Fee for Mass. Residents (non-refundable)	\$ 10
Application Fee for Out-Of-State Students (non-refundable)	35
Tuition for Mass. Residents (per credit)	40
Tuition for Out-Of-State Students (per credit)	188
Tuition Audit Course	21
General Education Fee (per credit)	44

Late Registration Fee	50
Student Health Insurance mandatory (approx.)	450
Student Liability Insurance (approx.) mandatory — Allied Health & Nursing Students	15
Radiation Therapy students	141
Transcripts (each)	3
Schedule Reprint Fee	1
Mass. PIRG (optional)	5
Deferred Payment Plan Fee	50
Health and Education Facilities Authority (HEFA) Fee (per credit)	6
Student Activities Fee (per semester)	23

## Financial Aid

The purpose of the Financial Aid Office is to provide financial assistance for those students who would otherwise be unable to attend college because of economic limitations. Based on an individual's financial need, the Financial Aid Office allocates funds to assist eligible students in paying for the cost of their college education. Assistance is provided through several sources and a student may receive a combination of more than one type of aid. The amount and type of aid a student receives is subject to allocations received by the College and governed by federal, state, and College regulations.

### ELIGIBILITY REQUIREMENTS FOR RECEIVING FINANCIAL AID

The student must:

- have a high school diploma or a GED
- enroll as a regular student in an eligible degree or certificate program
- be a U.S. citizen or eligible noncitizen
- make satisfactory academic progress
- sign a Statement of Updated Information, Selective Service Registration Status, Educational Purpose, and Refunds and Defaults

A student must enroll at least half-time to be eligible for a Federal SLS, Federal PLUS, or a Federal Stafford Loan.

### APPLICATION PROCEDURE

The student must complete the Free Application for Federal Student Aid (FAFSA) in order to apply for financial aid. It takes approximately four to six weeks to process a FAFSA. The student will be mailed a Student Aid Report (SAR) by the processor. The student must submit the SAR to the STCC Financial Aid Office in order to initiate the financial aid process. An STCC



Financial Aid Form will be mailed to the student on receipt of the SAR. The student will also be contacted if any documentation of income is needed.

**Deadlines:** Applications are available year round, however due to limited funding students are urged to apply early. Applications received after April 1 are considered late. Students must submit applications for the Massachusetts State Scholarship before the May deadline.

## **TYPES OF ASSISTANCE**

The following aid programs are available to students at STCC.

### **A. FEDERAL AID**

**PELL GRANT** is an award for students who have not earned a B.A. degree. There is a standard formula which produces an index number. The amount ranges from \$400 to \$2300 per year. The amount of the grant is determined by the index number, the cost of education at STCC, and the number of credits the student enrolls for during the semester.

**SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (SEOG)** is a grant for students who have not earned a B.A. degree and who demonstrate exceptional need. Funding is limited.

**COLLEGE WORK STUDY (CWS)** is awarded to students to promote part-time employment. Every effort is made to place students in their field of study. Students are paid an hourly wage and can work until they earn their maximum allocation. Funding is limited.

**PERKINS LOAN** is a low interest loan (5%) for students demonstrating exceptional need. Repayment of this loan begins nine months after the student leaves school or drops below six credits. Funding is limited.

**STAFFORD LOAN** is a low interest (present rate 6.94% through 7/1/93) federally subsidized loan for students who demonstrate a financial need. The federal government pays the interest while the student is in school. Repayment of principal and interest begins six months after the student leaves school or drops below six credits.

The federal government also offers an unsubsidized loan; the student pays the interest while in school. The student does not have to demonstrate a financial need, but does have to file a FAFSA.

**PLUS LOANS** are for parents of dependent students; **SLS LOANS** are for independent students. The present interest rate is 7.36% until 7/1/93. Further information is available in the Financial Aid Office.

### **B. STATE AID**

**MASS. STATE SCHOLARSHIP** requires that a student be a resident of Massachusetts for at least one year prior to the beginning of the Fall semester. Students must be enrolled full time (12 credits). Priority deadline is May 1st.

**TUITION WAIVER** is a waiver of part or all of the tuition charges (does not include fees). The student must be a Massachusetts resident enrolled in the DAY division. Funding is limited.

**STIA** is a grant program available to Massachusetts state residents enrolled in the DAY Division. Funding is limited.

**MASS. STATE NO INTEREST LOAN (NIL)** program offers a zero interest, long-term student loan to Massachusetts residents who demonstrate a financial need. Students must be enrolled full-time (12 credits).

Dependent students are considered to have the same state of legal residence as their parent(s).

### **C. OTHER**

There is a limited number of scholarships offered by the college and by private organizations in the greater Springfield area. This information is available in the Financial Aid Office, Garvey Hall, Room 285.

### **HOW NEED IS DETERMINED**

Each student applying for financial aid has a budget. This budget consists of direct educational costs for tuition, fees, books, and supplies, as well as those costs which are incurred by virtue of attendance such as transportation and lunch. In addition, students may have costs related to room and board, recreation, and personal expenses. From these expenses available resources are deducted. These resources may include taxable and non taxable income, and a percentage of the assets of the student, spouse, and/or the parents. The difference between the total expenses and the family contribution is the student's financial need.

### **OBLIGATIONS AND RESPONSIBILITIES**

All students must be enrolled at least half time per semester to be eligible for financial aid. Any student enrolled for less than full time (12 credits) may have their award prorated. **Enrollment status will be determined after class lists are updated.** Students who drop credits during this time will have their Pell Grant and Tuition Waiver reduced accordingly.

All students must notify the Financial Aid Office when a course(s) is dropped or a withdrawal from school is initiated. In these cases, the award amount which the student has already received will be evaluated to determine if the student must repay any portion of this award. Refund policies affecting tuition payments are listed in the college catalog. These policies, along with those established by the Office of Education, will be used in determining a student's possible repayment of a financial aid award.

All students must notify the Financial Aid Office of any change in his/her and/or his/her parents' income status, as well as name and address changes. All students are required to notify the Financial Aid Office of any additional funds received from outside sources during the academic year (scholarships, student employment [co-op], tuition waivers, etc.,). The Financial Aid Office is required to adjust the student's budget and/or revise his/her original aid award.

**Loan** recipients must have an entrance and an exit interview prior to completion of their course of study or their departure from the institution. The institution will counsel all borrowers regarding responsibility of loan indebtedness and repayment obligations.

**COLLEGE WORK STUDY** recipients must report to the Financial Aid Office for a job assignment. Failure to report for a work study placement within (2) two weeks from the first day of classes may result in termination of this award.

**SATISFACTORY PROGRESS**

In accordance with federal requirements, the following policy on satisfactory academic progress has been implemented.

- 1. Students must register for at least six (6) credits each semester to be eligible for financial aid.
- 2. If students register for only six (6) or seven (7) credits, they must successfully complete at least six (6) credits.
- 3. Students registered for eight (8) to twelve (12) credits must successfully complete at least 75% [but not less than six (6)] of the credits attempted.
- 4. Students registered for thirteen (13) or more credits must complete at least nine (9) of the credits attempted.
- 5. Students registered full-time (12 or more credits) for two consecutive semesters must complete at least twelve (12) credits for one of those semesters.
- 6. Students registered as three-quarter (9-11 credits) for two consecutive semesters must complete at least nine (9) credits for one of those semesters.

**NOTE:** Courses for which students receive grades of W or F are not considered courses successfully completed, but are courses attempted.

Students enrolled in the self-paced math module who need one or two credits in order to complete their math requirement must adjust their bill and credits with the Registrar. This will avoid the student's being penalized for credits not completed.

In addition, the institution is required to establish a time schedule delineating the length of time within which a student could reasonably be expected to earn a degree. The schedule STCC has established is as follows:

**Candidates for Associate Degree:**

Full-time student (12 or more credits)	6 semesters to earn a degree
Three-quarter-time student (9-11 credits)	8 semesters to earn a degree
Half-time students (6-8 credits)	10 semesters to earn a degree
General Studies students enrolled for 9 credits or more in developmental (remedial) courses in any one semester	8 semesters to earn a degree

**Candidates for Certificate:**

Full-time student	3 semesters to earn a certificate
Part-time student	4 semesters to earn a certificate

THE STUDENT'S COMPLETE ACADEMIC HISTORY AT STCC WILL BE REVIEWED FOR PURPOSES OF SATISFACTORY ACADEMIC PROGRESS, INCLUDING CREDITS ATTEMPTED WHILE NOT RECEIVING FINANCIAL ASSISTANCE.



A student changing programs must be maintaining satisfactory academic progress in the original program to be eligible for aid in the first semester of the new program; the status of the student in the new program will be determined by the number of earned credits applicable to the new program.

Financial aid students who fail to pass the total credits listed in the following tables may not be eligible for financial aid in the next semester(s) of enrollment. In order to return to satisfactory academic progress, students must pass the appropriate number of credits.

Semester	Minimum Credits Passed	Minimum Cumulative Grade Report Average
<b>Full time students (12 or more)</b>		
1 and 2	21	1.5
3 and 4	42	1.7
5 and 6	64	2.0
<b>3/4 time students (9-11)</b>		
1 and 2	16	1.5
3 and 4	32	1.7
5 and 6	48	1.9
7 and 8	64	2.0
<b>1/2 time students (6-8)</b>		
1 and 2	12	1.5
3 and 4	24	1.5
5 and 6	36	1.7
7 and 8	48	1.9
9 and 10	64	2.0

**Presently, the policy on satisfactory progress is being revised. The current policy is in effect until further notice.**

## ACADEMIC STANDING

The Financial Aid Office will abide by the college's policy for academic standing for day students. The same academic criteria will be applied to all students enrolled in the Division of Continuing Education.

Students' grades are received at the end of each semester. Financial aid will be terminated if the student is not making satisfactory progress. Students will be notified by mail and have the right to appeal. Suspended students and those students not making satisfactory progress for two consecutive semesters cannot appeal their loss of aid.

If extenuating circumstances prevented the student from maintaining satisfactory progress, the student must submit a written appeal with appropriate documentation (i.e., **all medical excuses must be accompanied by a doctor's note**) to the Financial Aid Office. The student must file an appeal within one week from the time he/she is notified. **LATE APPEALS WILL NOT BE REVIEWED.**

The written appeal will be reviewed by a committee made up of members from the college community. The student will receive a written response from the

Financial Aid Review Committee indicating whether or not the appeal was approved.

If the appeal is approved, financial aid will be reinstated. To help improve the student's academic standing, the committee has the right to limit the number of credits he/she enrolls for during the semester. However, the Financial Aid Office may not authorize a loan until the student successfully completes the next semester. If the student fails to maintain satisfactory progress for the ensuing semester, the student will be denied further financial aid. The student cannot appeal this decision.

**NOTE:** If the student's appeal is denied, financial aid will not be awarded; however, the Financial Aid Office encourages the student to continue with his/her educational studies. The student is responsible for his/her own tuition. If the student successfully completes enough courses to regain his or her eligibility, he/she should re-apply for financial aid for the following semester.

## Veterans' Information

### DAY STUDENTS

All new students eligible to receive V.A. benefits must contact the Office of Veterans' Affairs (OVA) upon receiving their acceptance letters. All returning students receiving V.A. benefits must contact the Veterans' Office after registration for the upcoming semester. Registering with the School does not certify an eligible student for V.A. benefits for the upcoming semester. All eligible students must contact the Veterans' Office in person to initiate enrollment certification.

### EVENING STUDENTS

The following are the procedures to be followed by students eligible to receive V.A. benefits:

1. Academic counseling is required before payment of tuition and fees.
2. Students must matriculate.
3. Paid receipt to confirm enrollment must be brought to the Office of Veterans' Affairs to initiate enrollment certification.

**NOTE:** All students receiving V.A. benefits must contact the Office of Veterans' Affairs upon withdrawing from a course or terminating enrollment, changing an address, changing dependent status or changing an academic program.

All students should contact the Financial Aid Office to investigate eligibility for Federal and State grants and scholarships.

## ACADEMIC STANDING

The quality point index is required to maintain acceptable academic standing in an approved program of study in either the Day School or the Division of Continuing Education.

For complete information on academic standing, refer to page 37.

For Continuing Education purposes, the completion of 12 semester hours will be considered the completion of a semester.

Students receiving benefits from the Veterans Administration are advised that if their quality point average does not permit them to remain in a program, they may continue to attend Evening Division courses at their own expense until their average allows them to re-enter the program.

Students are cautioned that the V.A. will not provide benefits to repeat a course which has been previously passed, nor will they support courses which do not meet the requirements for an approved program of study.

Students receiving benefits from the Veterans Administration are advised that benefits will be extended only for the normal length of time that an approved program is designed to encompass. Full-time students must complete Associate Degree Programs in five semesters. Part-time students will receive reduced benefits for the extended period of time necessary to complete their program of study. Specific questions about benefits, program approval and eligibility will be answered by the Veterans' Office on campus.

## GRADING PROCEDURE AND UNSATISFACTORY GRADES

STCC makes use of a scale from "A" to "F" converted into quality points which are utilized in determining a cumulative average. A grade of "F" equals 0 quality points and is unsatisfactory. A "D" equals 1.0 and may count toward a degree if the quality point cumulative average is maintained with respect to degree specifications. (Refer to page on Minimum Prerequisites for Admission.) The Veterans Administration does not authorize benefits for courses which are audited or challenged. **A withdrawal or termination from a course could constitute an overpayment for the veteran.**

## WITHDRAWAL AND ABSENCES

All students are required to notify the Registrar of withdrawals or terminations. Students receiving benefits must also contact the Office of Veterans' Affairs. Attendance procedures are at the discretion of the faculty.

Students receiving Veterans Administration benefits will be considered to be making satisfactory progress in each course each semester at the following intervals:

1. If their names appear on the official class list certified by the instructor at the end of the official add/drop period.
2. If they receive a mid-semester grade.
3. If they receive a final grade.



In the event any of 1. through 3. does not occur, the V.A. will be notified within 30 days after the enrollment report or grade report has been issued that said student is not enrolled in the course.

Faculty members may request the Dean of Student Services to withdraw a student for excessive absences.

## **TUITION WAIVERS AND/OR EXEMPTIONS**

For information regarding (1) Massachusetts Vietnam Era Veterans Tuition Waiver, (2) Division of Continuing Education Tuition Exemption Program, or (3) Massachusetts National Guard Tuition Exemption Program, contact the Office of Veterans Affairs.

Individuals expecting to receive one of the above-mentioned waivers/exemptions, must come to the OVA prior to the start of each academic semester.

# **Academic Programs and Information**

## **DEGREE PROGRAMS**

### **CAREER PROGRAMS**

STCC offers a variety of career programs that are designed primarily for the individual seeking two years of higher education and immediate job opportunities upon graduation. Such career programs are available in the Engineering Technologies, Business Administration, Health/Human Services, and Social Sciences. Each of the career programs offers a two-fold objective. The student receives a general education background to provide him/her with a better understanding of the community around him and a technical preparation designed around a specific occupation.

Career students who plan to continue their education beyond the two-year level are advised to consult with their College counselor early in the program.

### **Certificate Programs**

In addition to the two-year, associate degree career programs, there are also four one-year certificate programs, as well as a number of shorter, certificate of completion programs, several of which are administered by the Division of Continuing Education.

### **TRANSFER PROGRAMS**

The transfer programs are designed for students who plan to transfer to a senior college or university after completion of one or two years at STCC. The courses offered in these curricula are generally those required to provide a broad educational background before beginning specialization in a major field of study. A high quality of academic achievement, revealing seriousness of purpose and of sound habits of study, is the most important qualification for successful transfer.

Four primary transfer programs are offered at Springfield Technical Community College:

1. Business Administration
2. Engineering and Science
3. Liberal Arts
4. General Studies

Many students attending the College consider, at some point in their career, transferring to a four-year institution. It is possible to transfer in a variety of areas, although careful planning is required. Students should be in early and constant contact with the transfer counselor and their academic advisor so that their preparation for transferring is correct.

### **Transfer Counseling**

Students interested in transferring to four-year colleges should plan early in order to take courses or programs paralleling requirements at the college they plan to attend. Assistance, in the form of individual advisement, is available by contacting the Office of Cooperative Education/Career Services and Transfer Affairs. In addition, catalogs, applications, and other transfer resources are available. Prospective transfer students should also review the Commonwealth Transfer Compact Information below:

### **Commonwealth Transfer Compact**

The Commonwealth Transfer Compact is an articulation agreement between the four-year state colleges and universities and the community colleges in Massachusetts. In 1990 the Compact was revised to provide a better process to facilitate the transfer of college credits and to ensure appropriate recognition for academic progress earned by students in a community college who wish to transfer and continue their education at a Massachusetts public college or university.

The Compact provides that an associate of art or an associate of science degree will be transferred as a unit (providing the student meets all admission requirements and is accepted) and will be applied toward a bachelor's degree, if the following courses are included in the associate degree:

#### **Compact Core Courses**

- 6 semester hours of English composition/writing
- 9 semester hours of behavioral and social sciences
- 9 semester hours of humanities and fine arts
- 8 semester hours of natural or physical science (with a laboratory component)
- 3 semester hours of mathematics

The remaining credits making up the total of 60 are to be on a college level.

Other points of clarification regarding the Compact include:

1. The student must complete the associate degree with a minimum of 60 semester hours exclusive of developmental coursework.
2. All Transfer Compact requirements must be fulfilled while meeting the requirements for the associate degree.

3. A Compact student may be required to take no more than 68 additional credits at the four-year college unless the student changes his/her program upon entrance, or additional general education requirements and/or requirements of the major total more than 68 credits.
4. The grade of "D" or "D-" will be accepted toward the bachelor's degree, but a receiving institution is required to apply "D" or "D-" credit toward a major only if it does so for "native" students, that is students who enrolled in the four-year institution as freshmen.
5. A student must have achieved a cumulative grade point average of not less than 2.0 at the community college awarding the degree to receive Transfer Compact status.
6. If a student has not completed the associate's degree, credit earned does not come under the protection of the articulation agreement.
7. Transfer Compact status **does not** assure admission to any state college or university. It only assures acceptance of college-level credit.

### **Transfer Articulation Agreements**

In addition to the Commonwealth Transfer Compact with the public institutions of higher education in the state, the College has individual transfer agreements with several private and public colleges. These agreements ensure graduates of corresponding STCC programs entrance on the Junior level.

Transfer Articulation Agreements currently are in effect with the following institutions:

University of Massachusetts at Amherst — B.S., Engineering  
 University of Massachusetts at Dartmouth — B.S., Engineering  
 Western New England College — B.S., Engineering; B.S., Business Administration  
 Rensselaer Polytechnic Institute — B.S., Engineering  
 Russell Sage College — B.A., Mathematics; B.S., Computer Science  
 Springfield College — B.S., Biology  
 Fitchburg State College — B.S., Industrial Arts  
 Westfield State College — B.S., Early Childhood Education; B.S., Management Information Systems  
 Elms College — B.S.W., Social Work; B.S.N., Nursing  
 Ward College — B.S., Electrical Engineering Technology  
 Boston University College of Engineering — B.S., Engineering  
 University of Hartford — B.S., Respiratory Therapy  
 Worcester Polytechnic Institute — B.S., Engineering  
 Rochester Institute of Technology — B.S., Engineering Technology  
 American Armenian International College of LaVerne, CA — B.S., Optical Engineering

For additional information, contact the Office of Academic Affairs.

### **Joint Admission with the University of Massachusetts at Amherst**

Springfield Technical Community College participates in the Joint Admissions Program with the University of Massachusetts at Amherst. This program guarantees participating students admission to the University school or college of their choice, provided they graduate from a comparable transfer program at



STCC with a cumulative grade point average of 2.50 or higher. Participating students are subject to the program requirements in effect at the University when they matriculate at STCC, and must earn their associate degree at STCC within five years of matriculation.

### **University Without Walls**

Students who choose the University Without Walls transfer option have the opportunity to obtain an associate's degree in General Studies at STCC while pursuing a bachelor's degree in a field of their choice through the University Without Walls, the University of Massachusetts adult bachelor's degree program. Completion of this program satisfies the University of Massachusetts general education requirements.

This option is ideal for adults who are interested in a four-year degree and who have life and career experience but little or no college credit. The University Without Walls degree is individualized, and usually incorporates credit for prior learning. UWW maintains an office on the STCC campus in Garvey Hall, room 267. For more information, call 732-5262. Also see the General Studies section of this catalog, beginning on page 120.

## **REQUIREMENTS FOR GRADUATION**

### **GRADUATION REQUIREMENTS**

The Springfield Technical Community College Board of Trustees has statutory authority under the Commonwealth's Higher Education Coordinating Council to confer academic degrees. Candidates for degrees shall have fulfilled the following requirements:

1. Candidates for degrees must meet all departmental graduation requirements. A minimum of 15 credit hours must be earned in residence at the College. Also, the student must have completed at least 20 credits in general education.
2. The student must have earned a minimum cumulative quality point average of 2.0 for all college level courses. Developmental courses are not credited toward graduation requirements.
3. The student must have satisfied all financial obligations to the College, including the payment of the graduation fee, at the beginning of the semester preceding graduation or when 45 credits have been approved for graduation.
4. A Perkins Student Loan recipient must have completed the exit interview with the Financial Aid Officer or his representative.

### **GENERAL EDUCATION CURRICULUM**

Students enrolled in an Associate in Science degree program are required to take a minimum of 20 credits in general education. For those in an Associate in Arts program, the minimum requirement is 33 credits in general education. The configuration of courses is distributed among the math and natural sciences, the humanities, and the social behavioral sciences.

The purpose of general education courses is to develop in students the capacity for critical thinking; the ability to communicate effectively; an appreciation for

the arts and humanities; and an understanding of the historic basis of our modern, technological society. General education also aims to assist in the development of people who are educated in mind, responsive to civic and social obligations, capable of adjusting to change, and learners for life.

Consult the individual departmental course of study for the specific distribution of general education courses required by each program.

## **SPECIAL PROGRAMS**

### **DEVELOPMENTAL EDUCATION PROGRAM**

The College offers developmental courses in math, science, English, and reading. Students enrolled in these courses receive support in the form of tutoring, progress evaluation, advising, and counseling as needed, with special attention toward fulfillment of students' academic career goals.

The General Studies/Developmental Education program identifies and guides students in "cores" of study based upon their selected fields of interest. Faculty advisors are assigned to the students from the academic departments into which each student aspires to matriculate.

The Individualized Learning Center (ILC) located in Building 17, Room 425, is the test/tutorial area for developmental mathematics. With the help of professors, audio tapes, peer tutors, and computer-assisted testing, students progress through various levels of mathematics at their own rate. In addition to their assigned class period, students may use the facilities at any time the ILC is open.

The Developmental English Department offers developmental writing and reading courses and a special course of study for students for whom English is not the native language. The department offers tutorial services through its Tutoring and Testing Center in Building 13, Room 101. The department also offers computer-assisted learning in the computer laboratory in 13/105 and a full-service language laboratory for English As A Second Language courses in 13/305.

### **ENGLISH AS A SECOND LANGUAGE PROGRAM**

The English As a Second Language Program has been designed to help students develop language skills for successful performance in a regular program at STCC.

Students are given the University of Michigan placement test and placed in the appropriate level according to the test score.

The program offers four different levels of English As a Second Language courses. Each level has three courses, for a total of thirteen hours of direct instruction per week.

The program also provides tutors for students who need additional support to enhance their understanding of English grammar concepts and to help them improve their language skills.

The English As a Second Language Program is offered through Core 6 of the General Studies Program. Please see page 121 for further information.

## **HONORS CERTIFICATE PROGRAM**

The Honors Certificate Program offers a challenging academic experience for qualified students who wish unique study and research opportunities in their major field of study. Working individually with selected professors, Honors Certificate Program participants receive specialized advising and support services, increased scholarship and transfer opportunities, and a special notation of distinguished academic work on diplomas and transcripts.

Students accepted into this program are required to complete at least 13 credit hours of honors-level courses before graduation. Six of these credits should be taken in honors colloquia courses, with one credit in library research.

Honors Certificate Program participants are selected on the basis of their academic potential and motivation. Entering freshmen with a 3.5 QPA from high school, or a 3.0 QPA from a high school honors program (or its equivalent), or a 1000 combined SAT score are eligible to apply for admission.

Currently-enrolled students at STCC are eligible after completing 12 college-level credits, if their QPA is 3.5 or higher.

Students whose QPA's do not meet these standards, but who feel they have the ability and interest necessary to participate in the Honors Certificate Program may apply for admission by submitting (1) a letter of recommendation from a recent teacher, and (2) either a letter of intent explaining why admission to an Honors Program is sought, or an original piece of writing demonstrating academic competence.

For further information and an Honors Certificate Program application contact the Office of Academic Affairs.

## **COOPERATIVE EDUCATION/CAREER SERVICES AND TRANSFER AFFAIRS**

This office offers a wide variety of employment-related services to students and alumni. The Cooperative Education program allows students to earn credit for taking advantage of part-time employment in their field while completing degree requirements. Career Services assists students and alumni who are seeking full-time or part-time employment after graduation. Both programs strive to bring students and the business community together for the mutual benefit of each.

### **Cooperative Education**

In order to participate in Cooperative Education, a student must maintain a 2.5 quality point average. Most students participate in Cooperative Education during their third semester in an established major; however, it is possible to participate in the program prior to that point. Students are recommended into the program by a job developer from the Office of Cooperative Education and Career Services and/or the faculty coordinator; final approval is made by the Director of Cooperative Education and Career Services.

Once a student is accepted into the program, a job developer and the student work together in securing a qualified employment position. During the first week of job placement, a learning contract is executed by the student, the faculty coordinator, the employment supervisor, and the Director of Cooperative



Education and Career Services. This learning contract outlines the learning goals and objectives as well as the criteria to be used in grading.

The faculty coordinator meets regularly with the student, evaluates his/her work performance, and determines a letter grade at the end of the semester. Students may receive a 3- or 6-credit Cooperative Education experience in one semester depending on the number of hours to be worked and the type of responsibilities to be required of the student. A total of 9 credits may be earned in the program during a student's quest for a degree. Programs participating in Cooperative Education are:

- Automotive Technology
- Bio-Medical Instrumentation Technology
- Business Administration
  - Accounting
  - Finance
  - General Business
  - Management
  - Marketing
- Civil Engineering Technology
- Computer Information Systems/Data Processing
- Computer Systems Engineering Technology
- Drafting Technology\*
- Early Childhood Education
- Electrical/Robotics Technology
- Electronic Systems Engineering Technology
- Energy Systems Technology
- Engineering and Science Transfer
- Environmental Technology
- General Studies
- Graphic Arts Technology
  - Options: Commercial Art
  - Printing Technology
- Landscape/Plant Science Technology
- Laser Electro-Optics Technology
  - Options: Laser Applications
  - Photonics
  - Optical Fabrication and Testing
- Law Enforcement/Criminal Justice
- Liberal Arts
- Mechanical Engineering Technology
  - Options: Computer-Aided Design/Computer-Aided Manufacturing
  - Computer Integrated Manufacturing
- Office Administration
  - Clerical Office Assistant\*
  - Executive Office Administration
  - Legal Office Administration
  - Medical Office Administration
  - Word Processing Management
- Telecommunications Technology

\*one-year certificate program

The Office of Cooperative Education/Career Services and Transfer Affairs is located on the second floor of Building 27.

## **ACADEMIC SUPPORT SERVICES**

### **STUDENT SUPPORT SERVICES PROGRAM**

The Student Support Services program provides college students with assistance in meeting their academic goals. Project services are designed to facilitate a student's adjustment to the college milieu and to maximize his or her potential for success. Specific services include: academic and career advising, specially-designed orientation and workshops, personal counseling, and a one-semester course. The program emphasizes individual contact with each project participant. Student Support Services is located in Building 27, second floor, and is a part of the General Studies Division.

### **BILINGUAL PROGRAM**

The Bilingual Program at STCC is designed to assist students whose native language is other than English. Bilingual counselors provide academic/vocational counseling and personal counseling as well as tutoring in English and assistance in filling out financial aid forms. The Bilingual Services Office is located in Garvey Hall (Building 16), room 146.

### **TUTORIAL ASSISTANCE PROGRAM**

The Tutorial Assistance Program is an important component of Springfield Technical Community College. Through the services of this program, students in need of tutorial assistance receive tutoring in any academic field. The Tutorial Assistance Program is administered through the Academic Affairs Office in Garvey Hall.

## **REGISTRATION AND ACADEMIC RECORDS**

### **ACADEMIC YEAR**

The academic year at Springfield Technical Community College is divided into two semesters with the first semester ending prior to Christmas vacation and the second semester resuming in the latter part of January. The final week of each semester is devoted to final exams. Unless a formal change is published, the calendar in the STCC College Catalog is official.

### **CLASS SCHEDULE**

A class schedule is published each year along with the academic calendar.

In the majority of cases, with the exception of Directed Study courses, three-credit courses meet three times a week and are of 50 minutes duration, or are 75 minutes long and meet twice a week. Exceptions may be found in career curricula and other special programs. Most classes follow a Monday/Wednesday/Friday or a Tuesday/Thursday meeting schedule, and usually begin at 8:30 a.m.

## REGISTRATION PROCESS

Returning students must pre-register for the Spring semester in November, and for the Fall semester in April of each year, with their faculty advisors. It is the student's responsibility to seek out information concerning departmental course requirements prior to pre-registration. This may be done with the assistance of the faculty advisor, department chairperson, or the Counseling Center. Returning students are expected to pay their bills and complete the registration process prior to the start of classes. Returning students who fail to pre-register are charged a \$50 late fee.

New students are encouraged to attend an Orientation session held in both August and January prior to the beginning of classes, at which time they are expected to pay their bills and complete registration.

Students wishing to change their schedules may do so during the first week of classes. Admittance to a course at this time is, however, dependent upon the seats available.

## EXAMINATIONS AND GRADES

Final examinations are scheduled for each course. At the end of each semester, all students receive written letter grades according to the following standards:

Letter Grade	Qualitative Equivalent	Quality Points Earned Per Credit
		Hour
A	93-100	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	63-66	1.0
D-	60-62	0.7
F	Below 60	0.0
I	Incomplete	no grade
W	Withdrawn	no grade
AUD	Audit	non-credit*

\*Non-graduation-credit courses are not factored into the Quality Point Average.

**The grade of Incomplete (I)** indicates that a major requirement of the course has not been completed. The following policy shall apply to incompletes:

1. An "I" (Incomplete) is a temporary grade assigned to students who fail to complete the requirements of a course. The grade of "I" is to be assigned only to the few students who have valid, approved reasons for their inability to complete the course work on time. An "I" is not to be assigned to a potential failure.
2. An "I" (Incomplete) will change to "F" four weeks after the beginning of the next regular academic semester.



3. This policy shall apply uniformly to the Day Division and the Division of Continuing Education.

## **ACADEMIC STANDING**

### **A. *Required Quality Point Average***

The quality point average required to maintain good academic standing is:

1. A minimum of 1.5 cumulative average for students who have attempted 12 or more credits at Springfield Technical Community College, including accepted transfer credits.
2. A minimum of 1.7 cumulative average for students who have attempted 27 or more credits at Springfield Technical Community College, including accepted transfer credits.
3. A minimum of 1.9 cumulative average for students who have attempted 42 or more credits at Springfield Technical Community College, including accepted transfer credits.
4. A minimum of 2.0 cumulative average for students who have attempted 60 or more credits at Springfield Technical Community College, including accepted transfer credits.

**NOTE:** Incomplete, Withdrawal, and Failure grades are counted as courses attempted, but Incompletes and Withdrawals are not factored into the quality point average.

### **B. *Probation and Suspension***

Students who do not meet the above requirements will be placed on academic probation. After one semester of probation, a student will be:

1. Suspended unless the cumulative quality point average is raised to that required for good standing (i.e., 1.7 for 27 hours, 1.9 for 42 hours, 2.0 for 60 hours or more), or
2. Continued on probation if the semester quality point average is 2.25 or above but the cumulative point average stays below that required to remain in good standing, or
3. Continued on probation if not in attendance, or
4. Removed from probation if the cumulative point average is raised to or above that required to maintain good academic standing.

**NOTE:** A student may be suspended without having previously been placed on probation if the cumulative average falls below 1.0.

### **C. *Waiver of Provisions of the Academic Standing Policy***

The Dean of Student Services Office administers the Academic Standing policy and questions may be addressed to that office.

An Academic Review Committee is named by the President of the College. The Committee has the authority to:

1. Re-admit students.
2. Waive provisions of the policy on academic standing.
3. Hear student petitions or grievances pertaining to the policy.

4. Give counsel and advice to those who administer the policy and give interpretation and intent clarifications.

Students in the health science programs must maintain a minimum quality point average of 2.0 in their major area of concentration and be accepted by a clinical facility for affiliation. Nursing students must maintain a 2.15 in their major area of concentration. All students in health sciences and nursing must maintain a quality point average of 2.0 in the biological and physical sciences.

The accumulation of credits alone does not necessarily mean that a student is entitled to a degree. A student should refer to his/her specific program curriculum for graduation requirements.

### **DEVELOPMENTAL COURSES (NON-COLLEGE LEVEL)**

Springfield Technical Community College has a number of courses that aid students with deficiencies in specific subject areas. These courses, all with course numbers below 100, are intended to bring the student's skill to a level where the student will be able to accomplish the college-level work. It is the policy of the College that, relative to developmental courses (non-college level), the following shall apply:

1. Academic credit will be awarded for developmental courses but will not count for graduation credit.
2. Developmental courses shall not be calculated into a student's quality point average on a semester basis nor shall such grades be calculated into a student's cumulative quality point average.
3. All registrations for developmental courses shall appear on student transcripts.

### **CLASS ATTENDANCE/GRADING POLICY**

The faculty of the College has voted to allow each instructor to set his/her own classroom attendance policy. Each faculty member will notify his students in writing at the start of each semester of his/her attendance policy, grading policy and course requirements. The Dean of Student Services will, upon request from an instructor, warn students when they are in violation of an instructor's published attendance policy. The Dean of Student Services may, at the recommendation of the instructor, withdraw such a student from that class.

Off-campus activities, appropriately supervised and sponsored by faculty members, which justify a student's absence from scheduled classes, must be approved in advance by the Dean of Student Services. Such activities must be justifiable on grounds consistent with the educational program of the College. Whether a student is excused from class or examination to participate in such activities is determined by the instructor concerned.

### **MID-SEMESTER GRADES**

At mid-semester, students will be graded by each of their professors. These grades will be recorded by the Registrar and forwarded to each student's advisor during pre-registration. These grades will not become part of a student's permanent record but are used to indicate his/her performance through the first half of the semester.

## **MAKE-UP EXAMINATIONS**

A student failing to take a semester examination may apply in writing to the appropriate academic dean and the instructor concerned, and, subsequently, the Executive Vice President/Dean of Academic Affairs, who may give permission to take a make-up examination. If, in their opinion, absence from the regularly scheduled examination was unavoidable, the student may take a make-up examination upon payment of a \$5 fee.

If the student's absence is due to his/her religious beliefs, then the following legislation will apply.

Any student in an educational or vocational training institution, who is unable, because of his religious beliefs, to attend classes or to participate in any examination, study, or work requirement on a particular day shall be excused from any such examination or study or work requirement, and shall be provided with an opportunity to make up such examination, study, or work requirement that he may have missed because of such absence on any particular day; provided, however, that such makeup examination or work shall not create an unreasonable burden upon such school. No fees of any kind shall be charged by the institution for making available to the said student because of his availing himself of the provisions of this section.

## **COURSE CHANGES (ADD/DROP)**

Students are permitted to add and drop courses (subject to the approval of faculty advisors) prior to the start of the semester and during the first week of classes without penalty.

## **COURSE WITHDRAWAL**

A student may withdraw from a course after the Add/Drop period through the twelfth (12th) week of classes with the grade of "W" (withdrawal) recorded on his/her official transcript. After the twelfth (12th) week, a grade will be recorded on the official transcript. Withdrawal forms require the signature of the course instructor, the faculty advisor, and the Registrar.

## **REPETITION OF COURSES**

Any student who receives an unsatisfactory grade in a course may repeat that course and both grades will appear on his permanent record. However, only the last occurrence will be calculated into his/her quality point average.

## **AUDITING OF CLASSES**

Students may attend certain classes as auditors (i.e., without receiving credit) under the following conditions:

1. Permission must be obtained from the Instructor and submitted to the Registrar during registration period.
2. All established charges for the course must be paid.
3. Priority in registration will be given to students who are registering in the course for credit.
4. Audit courses will be reflected on student's permanent record as Audit.



## **COLLEGE WITHDRAWAL**

Students wishing to officially withdraw from the College during a semester must complete a College Withdrawal form, which may be obtained in the Dean of Students' Office. At this time an exit interview will be conducted and a check will be made to ensure that all financial obligations to the College have been met.

A student who does not complete a semester and has not officially withdrawn from a course or courses will receive a letter grade of "F." To remove this letter grade, the student must petition the instructor to initiate a request for a grade change to Withdrawal. The decision of the instructor will be final. If the instructor cannot reasonably be reached, the request shall be submitted to the faculty of the appropriate academic department for a decision.

The decision will be based on documented evidence of extenuating circumstances provided by the student seeking the grade change. If the instructor or the appropriate department members deem a change to "W" is appropriate, the normal grade change procedure will be followed. Forms may be obtained by the instructor from the Registrar's Office.

## **ACADEMIC HONORS**

### **DEAN'S LIST**

In order to recognize above-average academic performance, a Dean's List is published each semester. Any student carrying 12 or more semester hours who earns a 3.3 quality point average is placed on the Dean's List, providing that student has no grade less than a "C" in that semester.

### **ALPHA NU OMEGA HONOR SOCIETY**

Springfield Technical Community College is a charter member of the Alpha Nu Omega Society. The purpose of Alpha Nu Omega is to foster academic excellence at the College. Membership is open to any student with a quality point average of 3.5 and who has completed 24 semester hours.

### **AWARDS**

At the Honors Convocation held prior to Commencement, Outstanding Academic Achievement awards are given to graduating seniors who have achieved a 4.0 Quality Point Average. Other awards and scholarships are given to those students whose academic records in their departments are outstanding, and to those who have contributed significantly to the total College community through their co-curricular participation. Besides awards by the academic departments and divisions, College-wide scholarships and awards include:

- Alumni Association Scholarships
- Athletic Excellence Awards
- Edmond P. Garvey Award
- Ernest J. Henderson Scholarship
- Higher Education Coordinating Council Scholarships
- Honors Program Certificates

- Joseph J. Cooligan Award
- Joseph J. Deliso, Sr. Scholarships
- Lucille Goodson Parks Award
- Michael W. Scibelli Scholarship Award
- Minority Talent Roster for Outstanding Minority Community College Graduates
- STCC Scholarships
- Tazzini Family Scholarship
- Teresina B. Thompson Award
- Who's Who Among Students in American Junior Colleges

## **COMMENCEMENT HONORS**

Academic honors are bestowed on those students at Commencement who have distinguished themselves academically at the College. In order to receive honors, a student must have a minimum of 30 semester hours in residency prior to Commencement and have achieved the following cumulative quality point average: *Honors* — 3.3 to 3.69; *High Honors* — 3.7 to 3.89; and *Highest Honors* — 3.9 to 4.0.

# **Student Information and Services**

## **SERVICES AND RESOURCES**

### **ACADEMIC COMPUTING SERVICES**

STCC is pleased to provide its students with exceptional and modern academic computing services. Our resources consist of Wang minicomputers and an IBM AS/400, as well as IBM and Macintosh microcomputers. There are over 200 workstations in 16 computer labs throughout the campus. Several buildings are connected by a token ring network. Many microcomputer labs have local area networks that utilize Novell Network operating system or AppleTalk. Staff are readily available in the computer labs to answer questions and assist students in their use of the College's computers. As the use of computers grows, we are making every effort to meet the needs of our student body.

### **ART GALLERY**

The STCC Art Gallery, located on the first floor of Building 27, is open Tuesday through Friday, 12:00 noon to 4:00 p.m. throughout the academic year. Directed by Art Department faculty member Larry Slezak, the Gallery presents approximately seven exhibits each year, featuring works by artists of local and national repute, as well as STCC student work.

## **ATHLETICS**

Inter-Collegiate Athletics are an integral and prominent part of STCC's educational objectives. Sports are seen as vital and beneficial activities. STCC is a member in good standing of the NJCAA and MCCAC.

There are currently nine inter-collegiate or club sports teams at STCC, including Men's tennis, soccer, basketball, baseball and golf along with Women's tennis, soccer, and softball.

Intra-mural and recreational activities are geared to the desires of the student population. In the past, intra-mural and recreational activities have included flag football, basketball, bowling, softball, floor hockey, and volleyball.

The new Scibelli Hall contains a gymnasium, locker rooms, and an outstanding weight training facility. In the lower level, there are free weights as well as machines, for beginners and experienced lifters. Open hours are posted at the beginning of each semester.

The intra-mural and recreational desires of the student body are assessed on a periodic basis so that these programs can change offerings as interests change.

## **BOOKSTORE**

The college bookstore, located on the first floor of Building 27, is open every school day from 8:00 a.m. to 4:00 p.m. It is also open evenings during the first two weeks of the semester for the convenience of Continuing Education students. Books, school supplies, equipment for course work, as well as miscellaneous items are offered for sale. In addition, students can purchase their class rings, and arrange for magazine subscriptions at discount prices. Used books are also offered at discount prices, and new and used books can be sold back throughout the year.

## **CAREER SERVICES**

Career Services offers employment assistance to both graduating students and alumni at each step in the career search process. From setting goals to securing employment, resources are available to help launch a successful career.

During the course of their academic programs, students are encouraged to seek assistance in career planning. Counseling is provided to help choose, change, or confirm career goals in conjunction with academic advisors and the Counseling Center. Once a career goal is established, students work toward securing a position. Guidance in writing cover letters and resumes and in developing interview skills necessary to the job search is available to students and alumni.

Current employment listings are available on a year-round basis covering both the public and private sectors. Job postings from state and local government as well as locally- and nationally-based companies are accessible through this office. On- and off-campus interviewing is arranged to accommodate the needs of area employers and graduating students. A Career Resource Center, dedicated to serving the needs of students and alumni, is open throughout the academic year and during the summer. Complete with resource materials, the center contains a variety of information to assist in the career search process.



All graduating students are required to register with Career Services during their final semester by completing a Career Placement registration form. By doing so, students are eligible to participate in on- and off-campus company recruitment and other career placement activities.

The Office of Cooperative Education/Career Services also maintains a record of summer/general employment opportunities. All students are invited to utilize this resource throughout the year. This office is located on the second floor of Building 27.

## **COUNSELING CENTER**

The Counseling Center is a student-oriented, supportive environment where you may go to receive career, academic, rehabilitation, and/or personal counseling and related services, as well as referral services to community agencies, when appropriate.

### Philosophy

The Counseling Center's primary mission is to assist students to explore, define, and accomplish personal, academic, and career goals. We believe in the dignity, worth, potential, and uniqueness of every individual and his or her ability to be self-directed. We are dedicated to the enhancement of the spirit and quality of life of each member of the College community. We translate these beliefs into action through providing high quality individual and group counseling services, programming focused on the developmental needs of College students, and consultative services to assist faculty and staff.

### Overview of Services

- Educational counseling
- Career counseling
- Drug and alcohol counseling
- Personal counseling
- Advocacy/referral
- Consultation with faculty

### *Workshops/classroom presentations*

Study skills

Career planning

Stress management

Controlling anxiety through biofeedback training

Coping with test/math anxiety

### *Support groups*

Academic support

Single parents

Gay/Lesbian/Bisexual support group

The Men's Group

The Stick-to-It Group for recovering alcoholics/substance abusers

## Career Counseling

Career Counseling/Career and Life Planning is part of a developmental process. It can appropriately occur at any point throughout a student's education. Its major tasks include self-assessment, career exploration, and decision-making. Specific components of these tasks include:

- a.) Interests, aptitude, personality, and value assessment through interviews, psychological tests, and exercises
- b.) Needs assessment related to work satisfaction
- c.) Skills identification/determination of work-related skills
- d.) Values clarification through tests and exercises
- e.) Career exploration utilizing computer software, career reference books, Counseling Center fact sheets, and diverse resources for occupational information
- f.) Decision-making related to:
  - 1.) appropriate career choice
  - 2.) appropriate educational program
- g.) Implementation of career choice through:
  - 1.) application/acceptance into appropriate College program
  - 2.) support services, if necessary, until successful completion of educational objectives/graduation

## Career Planning Resources

Important career planning resources include:

### *Career and Catalog Library*

- a.) Computer software related to career planning and decision-making
- b.) Extensive occupational information, which helps ensure that students make an informed career choice

### *System for Interactive Guidance Information Plus:*

S.I.G.I. ("Siggy Plus") is a state-of-the-art, computer-based, highly-interactive career guidance system. Students can reserve time by calling the Counseling Center secretary, Dolly Oppen, at extension 3884, or stop by to arrange an appointment.

While it is possible to spend several hours using SIGI, we recommend that the student break this up into individual one-hour sessions, each followed by a meeting with a career counselor.

## Overview of SIGI Plus

The System of Interactive Guidance and Information helps people with the process of making career decisions and plans. You may use SIGI+ to:

- figure out what you want and what you can afford

- get the facts about occupations
- put the pieces together to be a wise decision-maker.

SIGI+ can help, but it can't do everything:

- SIGI+ doesn't give you one simple answer
- SIGI+ doesn't make your decisions for you
- SIGI+ can't go out and hunt for your next job

SIGI+ has eight sections. Each one is an important step in the career decision-making process. Many people find it helpful to use all the sections in order, but you can also go directly to any section to answer your immediate questions. Here's what you can do in the eight sections of SIGI+:

- SELF ASSESSMENT ..... find out more about yourself
- SEARCH ..... make lists of occupations to explore
- INFORMATION ..... get the facts on any occupation in SIGI+
- SKILLS ..... see what skills each occupation requires
- PREPARING ..... see how to prepare for each occupation
- COPING ..... get help with practical problems
- DECIDING ..... decide which occupation is your best choice
- NEXT STEPS ..... make plans to get yourself started

### *Career Interests Tests/Exercises*

The Career Assessment Inventory, the Strong Vocational Interest Blank, and other interest surveys are available in the Counseling Center at no charge to the students. Each counselor can administer and interpret the instrument which seems most appropriate for the individual. A great diversity of career planning exercises are also available, related to personality, interest, needs, skills, values, career exploration, and career decision-making.

### Educational Counseling

*Academic Advisement* — The Counseling Center is knowledgeable regarding each program in the College and can advise students on course selections and intracollege transfer requirements and procedures.

*Academic Assistance* — The Counseling Center assists students in developing appropriate study skills through workshops and individual counseling. When students are experiencing academic difficulties, the Counseling Center may also play a role in bringing student and instructor together to help resolve academic and interpersonal difficulties.

### Personal Counseling

*Supportive Counseling* — Counselors are available to offer supportive counseling to students experiencing difficulty in their academic work due to personal crises or circumstances which are causing anxiety and stress. Counselors provide a structured setting in which students find assistance and support in dealing with the problems they are experiencing.

*Referral to outside agencies* — Students exhibiting withdrawal, disruptive behavior, extreme nervousness, or other unusual behaviors, may have severe



emotional problems which require long-term therapy. In such cases, students are referred to community or private agencies for evaluation and follow-up. Counselors maintain relationships with community mental health professionals in order to make the referral process easy for STCC students.

*Psychological consultant* — A consulting psychologist works with the Counseling Center staff throughout the academic year, providing case consultation, in-service training, and emergency consultation services.

*Workshops and Courses* — Counselors will be presenting a series of workshops over the year to promote academic and personal growth. Times and places for these workshops will be listed in *The Ram* or *STCCler*, and posted in all buildings. Some topics of these workshops are Study Skills, Coping with Math Anxiety, Overcoming Test Anxiety, Career Decision-Making, SIGI Plus: Systematic Career Planning by Computer, and Overcoming Self-Defeating Behaviors.

### **Confidentiality and Its Limits**

Underlying the counseling relationship is the principle of confidentiality. This principle assures you that the facts and opinions you reveal about yourself in the course of counseling will be held strictly private, and will not be revealed to others without your prior written permission.

However, there are several exceptions to this principle of which you need to be aware. The exceptions include:

professional consultation

child abuse/neglect

elder abuse/neglect

threatening to harm yourself

threatening to cause physical  
violence to another

information related to the planned  
commission of a crime

Legal cases related to:

child custody

hospitalization

court-ordered evaluations

Please discuss with your counselor. More extensive written materials are available upon request, including the state regulations. Also see page 57 for more information.

### **DAY CARE CENTER**

Armory Square Day Care, Inc. is a private, non-profit day care center operating on the campus of STCC. The center opened in the fall of 1984, to serve the children of students, faculty, and staff at STCC. Located in Building 20, the center is licensed to accommodate up to 40 children, from ages 2 years 9 months to 5 years, during the academic year. Children must be toilet-trained. The center also runs a full-day kindergarten program for children ranging in age from 5 years to 7 years. Breakfast, lunch, and a snack are served. The center plans to move to Building 11 with an expanded program to include infants and toddlers.

The Armory Square Day Care program is based on the belief that young children learn through play. The center provides a variety of experiences designed to build the child's self-esteem and develop social skills. The telephone number is 737-3455, or 781-7822 extension 3632. The Day Care office is located in 20/221.

## **DISABLED STUDENT SERVICES**

Special support services are available for any student who has a physical, emotional, and/or learning disability. Counselors work with students and faculty in determining specific accommodations and modifications to ensure equal opportunity and access to campus facilities, programs and services.

Coordinating of services within the College and community will provide the student with counseling, career services, and tutorial assistance. Some specialized equipment and adaptive computing is available for student use. Van transportation is available for mobility-impaired students who live in Springfield.

### Learning Disabilities

A Counselor for Students with Learning Disabilities is available on a part-time basis. If a student is experiencing extreme difficulty in reading, comprehending, or processing information, a learning disability may exist. The Counselor for Students with Learning Disabilities will as necessary offer students direct assistance, arrange for evaluation and testing to determine the nature of the learning problem and strategies for improvement, and work with both faculty and students related to modification of teaching and learning methods to promote student success.

The Office for Students with Disabilities is located within the Counseling Center, Building 27, second floor. For information, inquiries, and referrals, call extension 3884.

## **HEALTH SERVICE**

Every student while on campus may seek the counsel and professional advice of the college nurse whose office is in Building 16 Room 105. The nurse is on duty every school day from 8 a.m. until 4 p.m. Her extension is 3510. In case of any emergency, the number to call is 3911. The nurse or security will respond and decide whether it is necessary to call an ambulance. A physician is available on campus either on a walk-in basis or by appointment, on Monday, Tuesday, Thursday, and Friday from 11:00 a.m. to 11:45 a.m.

## **HOUSING**

Since the overwhelming majority of our students commute, the College does not operate dormitories. However, a current list of apartments and rooms available in private homes is maintained for students whose permanent residence is at a distance. The College does not inspect, supervise, or recommend student housing facilities. Housing arrangements are the sole responsibility of the student. The Dean of Students' Office will assist students who have not been able to make suitable arrangements from the current housing list, which is available on request.

## **THE LIBRARY**

STCC's library is located in Building 27 (along Federal St.), directly across the lobby from the college bookstore. During the fall and spring semesters, it is open from 7:30 a.m. to 9:00 p.m. Monday through Thursday, and 7:30 a.m. to 5:00 p.m. on Friday, as well as 9:00 a.m. to 1:00 p.m. on Saturday. The library is closed on legal holidays; summer and vacation hours may vary. All students

enrolled part- or full-time in both day and evening divisions are entitled to use the library's resources and services.

#### *Print Materials:*

The library's print collection contains over 58,000 books, 450 journals, 17,000 pamphlets and documents, newspapers from surrounding major metropolitan areas, catalogs of colleges throughout the U.S., current fiction and non-fiction paperbacks, and children/young adult books. The selection of journals includes a number of popular magazines in addition to a wide variety of specialized publications covering all fields in the STCC curricula. Magazines and reference books — including encyclopedias, atlases, almanacs, catalogs, indexes, and directories — must be used in the library. All other books and pamphlets may be charged out with a valid STCC I.D.

#### *Career Center:*

Situated across from the reference desk, the library's Career Center offers materials on a wide variety of occupations. Brochures, industry profiles, career handbooks, resume/cover letter guides, and job hunting manuals comprise the bulk of this collection — much of which is available for loan.

#### *Audiovisual Materials:*

The library maintains a large audiovisual collection, including audiocassettes, compact discs, film formats, records, slides, and videocassettes. Fully-equipped AV rooms for individual and small group use are located on the first floor of the library. Staff are available to facilitate equipment use. Many AV materials, though not all, may be charged out of the library just like books.

#### *Circulation:*

All library materials are charged out and returned at the circulation desk. Items placed on "Room Reserve" by faculty are located here as well. A valid student ID card is necessary in order to sign out materials.

For convenience, there is a book drop outside Building 27 where materials may be returned when the library is closed. Audiovisual materials **must** be returned directly to the library.

#### *Reference:*

There is a reference librarian available to assist students with locating materials or information for class assignments or personal use. There is a wealth of resources in the library, and recently acquired subscriptions to computer databases provide easy access to additional materials locally, regionally, and nationally. Please ask at the reference desk for more information about these new services. Interlibrary loan services are also available.

#### *Cooperative Borrowing:*

CLGS (Cooperating Libraries of Greater Springfield) — Through an agreement among the colleges in the Greater Springfield area, any STCC student may use the other college libraries by presenting a valid STCC ID. The participating



institutions are: American International College, Bay Path College, Elms College, Holyoke Community College, Springfield College, Western New England College and Law School, and Westfield State College. Springfield City Library and Baystate Medical Center Library are also included in the group. As a result of CLGS, many additional resources are available. When using other area libraries, students are subject to their policies and regulations concerning loan periods and possible penalties for overdue materials.

C/W MARS (Central/Western Massachusetts Automated Resource Sharing) — STCC participates in C/W MARS, a computer network of 60 academic, public and special libraries, which brings its members automated circulation and inter-library loan systems. As a result of the library's participation in this network, the STCC community has access to over 4 million books and other library materials previously unavailable to the college community.

Other — Students may use the resources of all Massachusetts public college and university libraries by presenting a valid STCC ID. If a student needs a book which is unavailable in the Greater Springfield area or at the University of Massachusetts, the book can be borrowed by mail through interlibrary loan. All requests for these loans are handled at the reference desk.

### *Miscellaneous*

Within the library are other facilities which students may wish to use. These include a copy machine which costs 10¢ per page (7¢ with a copy card), and a microfiche copier which costs 10¢ per page.

A student library guide with complete details on materials and services is available to all students at the circulation and reference desk.

## **MESSAGES**

In the event of an off-campus emergency requiring the attention of a student, efforts will be made by the Dean of Students' Office to contact the student. Call the Dean's Office at 781-7822, extension 3454.

Only emergency messages can be relayed to students. The College does not have a public address system. Only a serious emergency can justify interrupting a class. If a student is not in the class, it is impossible to locate and notify the student.

## **PARKING**

Each year the College attempts to secure a maximum number of parking spaces in the general area of the campus for student parking, and in September the College publishes an updated list of independent parking areas located in the general vicinity of the campus. Parking spaces in many of these lots are controlled by the College, and parking permits are available for a reasonable fee from the Security Office. There is sufficient parking available on these lots for all students of the College. It should be noted also that, because the College is located on a National Historic Site, there are many areas on the campus where parking is not allowed; however, peripheral lots are located within easy walking distance of the classroom buildings.

## **STUDENT ACTIVITIES**

The Student Activities Program is designed to complement the instructional programs by providing a variety of meaningful educational, cultural and social experiences. The Student Activities Center assists students and faculty in the planning of co-curricular programs and in the development of student organizations. The staff of the Student Activities Center, with student leaders, provides support to special planning groups and interested students in the promotion of activities on campus. The activities and organizations are open to interested students, faculty and staff.

Whenever the College is closed, whether due to weather conditions or an emergency situation, all extra-curricular activities are automatically cancelled, to ensure the safety of students and others.

The Student Government Association is a forum for student viewpoints and needs, which are brought to the attention of the College administration through the Student Senate. All students are members of the Student Government Association and are represented by the Student Senate, which meets regularly during the school year, and is elected annually by the student body.

A student is elected each March for a one-year term on the STCC Board of Trustees. Interested students must file nomination papers with 150 signatures, and attend a mandatory informational meeting prior to the election. To be eligible, applicants must be full-time day students in good academic standing.

Social, professional and other student organizations are considered an integral part of the College's total educational program. Students with common interests may form recognized student organizations.

Specific information on Student Activities can be found in the STCC Student Handbook.

## **WOMEN'S CENTER**

The Women's Center at STCC is the place where non-traditional students can find peer support, encouragement toward academic success, and an extensive referral network that will facilitate a student's adjustment to college and its challenges. All re-entry students are encouraged to use the Center as a place to share information, concerns, and experiences. Located in Building 20, adjacent to the cafeteria, the Women's Center can be the bridge between college, work, home, and family for non-traditional students. The telephone number is 781-7822, extension 3134.

## **POLICIES AND PROCEDURES**

### **STUDENT RIGHTS AND RESPONSIBILITIES**

This statement of rights and responsibilities is designed to clarify those rights which the student may expect to enjoy as a member of the student body of the College, and the obligations which admission to the College places upon the student.

## GOAL

To provide an atmosphere where solid intellectual and academic development is provided.

## OBJECTIVES

### A. Student Responsibilities

1. To be knowledgeable of and comply with the directives, regulations, and laws as established by the Massachusetts Higher Education Coordinating Council, Springfield Technical Community College Board of Trustees, the College administration and the Student Government Association.
2. To respect the rights of individuals and groups to independent action as long as those rights do not interfere with the parallel rights of others — minorities and majorities alike — including the avoidance of action interfering with those educational processes under the auspices of the College.
3. To be knowledgeable of and comply with the directives, regulations, and laws of duly constituted civil authorities.

### B. Student Rights

1. To have the opportunity to pursue higher education.
2. To have the freedom to exercise the rights of citizenship, association, inquiry, and expression.
3. To have the right of privacy and confidentiality.
4. To have the right of voting representation on all recommendations to the President of the College on matters of concern, including but not limited to, academic standards, student services, and curriculum changes.
5. To have the right of quality education, including but not limited to:
  - a. The right to competent instruction in courses and programs offered by the College.
  - b. The right to assistance in overcoming educational, cultural, emotional and economic disadvantages which hinder the educational process.
  - c. The right to receive in writing from each faculty member during the first week of classes, of every semester, a brief, written course description and outline of the material to be covered, course requirements including a specific list of information and techniques which the student is expected to acquire, attendance policy, and the grading system to be utilized.
6. To have the right to fair and equal treatment, including but not limited to instruction, evaluation, and services by faculty, staff, students, and administrators.
7. To have the right to procedural due process in grievance and disciplinary hearings.

Approved by the Springfield Technical Community College Board of Trustees, May 29, 1984.



## ACADEMIC HONESTY POLICY

Communication of knowledge and a free exchange of ideas, two essential aspects of a college community, require a fundamental standard of honesty. Students and faculty must be able to expect that thought and work presented for the class are the property of the person claiming credit for them. To safeguard these principles, it is important to clarify the rules and procedures regarding academic honesty.

1. Students must refrain from all forms of academic dishonesty including cheating on quizzes and examinations, abetting others in cheating, appropriating other students' work, and plagiarizing written assignments.
2. Faculty who find students in violation of honesty standards shall determine the appropriate response. Punishment may include dismissal and/or a failing grade in the course.
3. Faculty will report incidents of academic dishonesty and the action taken in response to them **in writing** to the Dean of Student Services.
4. The Dean of Student Services may elect to pursue further action up to and including dismissal from the College.
5. Students who believe themselves to be unjustly accused or punished for academic honesty violations may pursue the matter through the grievance procedure outlined on the following pages.

## STUDENT CODE OF CONDUCT

The College assumes that its students will behave in such a way that will reflect creditably upon their homes, family, College and community. To help provide an orderly atmosphere to nurture student development, certain regulations and policies have been developed over the years. The College further assumes that all students will abide by these regulations and policies. Violations of established College policy may result in disciplinary action up to and including suspension from the College.

The following is not an all-inclusive list of prohibited actions, but will serve as a guideline.

1. Academic dishonesty — such as plagiarism, cheating, use of unauthorized books or notes, knowingly furnishing false information, unauthorized reading, removing, duplicating, photographing, misuse of any college file, document, or record of any faculty, administrator, staff or student.
2. Alteration of college records, documents, or identification instruments or the use of the same with the intent to defraud.
3. The possession or use of narcotics and dangerous drugs as defined by the laws of the Commonwealth of Massachusetts is prohibited on campus and at all college-sponsored off-campus activities. The use or possession of alcoholic beverages is restricted by the Massachusetts Higher Education Coordinating Council to special social events.
4. Intentional obstruction or disruption of normal college conduct, functions, processes, routines, college activities on or off campus, or activities of those invited to the campus for any purpose.

5. Physical abuse or misuse of persons or property on campus or at college-approved off-campus activities.
6. Theft, or unauthorized use or possession of any property (including keys, files, documents, library materials, etc.) owned, leased, or maintained by the College or by persons on the campus.
7. Weapons, firearms, explosives — possession, sale, or use of any weapon, firearm, explosive, or explosive device including fireworks.
8. Failure to comply with directions of college faculty, staff and administration acting in the performance of their duties.
9. Violations of published college regulations including parking, motor vehicle movement, use of college buildings or equipment and any other regulations which may from time to time be enacted.

## **DISRUPTIVE BEHAVIOR**

Behavior which disrupts the establishment or maintenance of the learning environment may result in the student causing the behavior being excluded from the classroom by the instructor; the student may be subject to further punitive action by the Dean of Student Services.

The disruptive student has a right:

1. to be clearly informed of the problem or behavior in question;
2. to have a clear understanding of the consequences of not modifying the condition or behavior; and
3. to have an opportunity to modify the condition or behavior.

## **SPRINGFIELD TECHNICAL COMMUNITY COLLEGE STUDENT GRIEVANCE PROCEDURE**

If a student has a grievance relating to college policy, procedure, personnel, or student rights, the student may follow this grievance procedure. If assistance is needed with the process, the student may contact the Dean of Student Services' Office, and help will be provided.

### **1. Definitions**

**"Complaint:"** The informal, often unwritten stage of an allegation of mistreatment.

**A "grievance:"** A written complaint filed by a student with the person designated by the President as Student Grievance Officer specifically alleging discrimination or an abridgement of his/her rights as a student.

**"Student Grievance Officer:"** A College employee assigned responsibility for administering the student grievance procedure, including the maintenance of specified records. At STCC, the Dean of Student Services has been assigned this responsibility. In case of grievance against the Dean, the President shall designate another College official to act as the Student Grievance Officer.

**"Grievance:"** The student or students filing the grievance. The grievant must have been a registered student of the College at the time of the alleged mistreatment.

## *2. Purpose*

The primary purpose of this procedure is to secure prompt and equitable resolution of student complaints and grievances. Grievances properly filed in this forum include, but are not limited to, matters arising under federal and state laws prohibiting discriminatory educational practices. Customary channels of communication shall be used wherever feasible, in seeking clarification of questions of concern before the grievance procedure is utilized. Every effort shall be made to maintain confidentiality at each level of this procedure.

## *3. Time*

The number of days indicated at each level shall be considered as a maximum. Every effort shall be made to expedite the process. Nevertheless, the specified time limits may be extended in extenuating circumstances by the immediate supervisor of the person against whom the grievance is directed, the President or his/her designee, or by mutual consent of the grievant and the person against whom the grievance is directed, provided that such extensions shall be confirmed in writing.

## *4. Procedure*

### *Level One — Informal Procedures*

Customary channels of communications shall be used in seeking clarification of questions of concern and in resolving complaints before the formal procedure is used. This is the informal stage where most complaints are resolved. For example, a student who has a complaint regarding a classroom incident customarily notifies the faculty member, and then the Dean of that division. The student may consult with the Student Grievance Officer, William Manzi, Dean of Student Services, at any time prior to or during the grievance procedure, and must consult with him prior to filing any written complaint.

*Step One* — Except in cases of alleged physical assault or sexual harassment, the grievant shall first present the grievance orally and informally to the person against whom a grievance exists. This should be done in a reasonable period of time, within thirty (30) calendar days from the date that the Grievant knew or should have known of the grievable act or inaction. An individual who believes that he/she is the victim of sexual harassment or physical assault may initiate his/her complaint at Level One, Step Three, i.e., with the immediate supervisor of the person against whom the complaint exists, not later than thirty (30) calendar days following the instructional period when the alleged incident occurred.

*Step Two* — If the complaint is not resolved within ten (10) calendar days after the notice of the Step One complaint, the grievant may within ten (10) calendar days present in writing the allegations and known facts to the person being grieved. A complaint filed at this level should specifically state that it is filed at Level One, Step Two. The grievant shall also date the document, retain a copy, and hand deliver or send it by certified mail. The person against whom the complaint is directed shall forward a written Step Two response, if any, to the student within seven (7) calendar days from receipt.

*Step Three* — If the complaint is not resolved within seven (7) calendar days after receipt of the Step Two response or if no written response is issued, the grievant may present it in writing to the supervisor of the person against whom the grievance is directed, with a copy to the Vice President of the area of the



person(s) against whom the grievance is directed. The supervisor shall investigate the complaint, and after conferring with the appropriate Vice President, shall forward his/her written decision to the grievant and to the person being grieved within seven (7) calendar days.

#### *Level Two: Formal Procedures*

**Step One** — Student Grievance Committee — If the complaint is not resolved within the period allowed at Level One, Step Three, the grievant may present a formal grievance, in writing, including a statement of the charges, and all supporting statements and evidence, to the Student Grievance Officer within ten (10) calendar days after receipt of the supervisor's decision. The Student Grievance Officer shall arrange a meeting of the Student Grievance Committee within fourteen (14) calendar days following receipt of the grievance, and shall provide a copy of all written supporting statements and evidence presented at the lower steps to each member of the committee at least twenty-four (24) hours prior to the hearing. The committee shall render its findings and any recommendations within seven (7) calendar days.

#### *Membership of the College Student Grievance Committee*

The committee shall consist of five members:

- 1 — classified employee
- 1 — administrator
- 1 — faculty/staff unit
- 1 — student

The fifth member shall be from the same identifiable group as the person being grieved. Members shall be appointed by the President. In cases of discrimination as they apply to applicable federal or state anti-discrimination laws, the Affirmative Action Officer shall be a non-voting committee member. The Student Grievance Officer shall be a non-voting committee member, attend all meetings, and maintain confidentiality of meetings.

#### *Rules for Committee Hearings*

*The rules governing hearings before the College Student Grievance Committee are available in Dean Manzi's office.*

**Step Two** — Within thirty (30) calendar days after the grievance committee issues its findings and recommendations, the President or designee shall evaluate all the evidence and make a decision, in writing, to all concerned parties. At the President's or designee's discretion, a hearing may be conducted prior to rendering a decision. This hearing shall be closed, with the grievant and person(s) grieved invited, and each may bring a representative. The decision of the President or designee shall be final and binding on all parties.

#### **5. Grade Appeals**

Complaints or grievances filed in connection with assigned grades represent a special case within the grievance procedure. Grading reflects careful and deliberate assessment of a student's performance by the instructing professional. As such decisions are necessarily judgmental, the substance of these decisions may not be delegated to the grievance process. Nevertheless, the

College recognizes that in rare cases the process of grading may be subject to error or injustice.

Except as otherwise provided by a separate grade appeals procedure for clinical programs as approved by the President of the College, a student who alleges an error or injustice in the grading process may employ the grievance procedures described in Level One, Steps One through Three, above; provided that the appropriate Dean for these purposes shall be the Executive Vice President/Academic Dean. No complaint challenging a grade may be initiated later than thirty (30) calendar days following the last day of the instructional period for which the grade was granted. If the faculty member who assigned the grade is no longer employed by the College or not available, the complaint may be initiated with the appropriate Dean. If substantial evidence of error exists, the grade may be remanded to the instructor for reassessment. If the instructor is unavailable, the grade shall be reassessed by the appropriate Dean or designee.

#### *6. Hearings and Decisions*

At each of the above levels, the grievant and the person being grieved shall be afforded the opportunity to be present and be heard. In addition, each party may present, examine, and cross examine witnesses. All decisions and/or recommendations at each level must be in writing, with the exception of Level One — Steps One and Two, and shall include supporting reasons with copies to both parties.

#### *7. Rights of Persons Being Grieved*

If recommendations result in sanctions against College employees, these measures shall be regarded as administrative actions subject to all conditions of applicable collective bargaining agreements and College and/or Higher Education Coordinating Council personnel policies.

#### *8. Alternative Forums*

Filing a grievance in accordance with the procedures herein detailed in no way abrogates the student's right to file complaints with the appropriate state and federal agencies or with the court. However, once the grievant initiates proceedings in any other forum, his/her rights to proceed under the student grievance procedures are waived.

For purposes of filing federal level charges of discrimination, the student may contact the College Director of Affirmative Action, Myra Smith, in Garvey Hall, Room 245, extension 3833.

#### *9. Withdrawal*

Students may withdraw their informal or formal complaints at any time. Withdrawal may be accomplished in writing or by oral agreement confirmed in writing.

#### *10. Reprisals*

The College shall not interfere, restrain, or coerce any student in the exercise of his/her rights under this grievance procedure and/or his/her participation in any grievance proceedings.

## **POLICY OF CONFIDENTIALITY OF STUDENT RECORDS**

### **Educational Records**

The Family Educational Rights and Privacy Acts 1974, as amended, provides for students to have access to their educational records, to challenge anything in the records which they consider inaccurate or misleading, and to limit the release of such information.

In compliance with the law, the College has established a policy to protect students from misuse of information. The policy is summarized as follows:

1. Directory Information will include (1) name, (2) address, (3) confirmation of date of graduation and certificate/degree received. Students may withhold their Directory Information by notifying the Dean of Student Services in writing.
2. Authorized personnel may have limited access to student records for (1) internal educational purposes, (2) routine administrative and statistical purposes, or (3) legitimate inquiries made to review a student's background information in order to adequately instruct and advise the student in a specific academic area.
3. A record log or audit trail will be kept for all students showing the student's records. No record of access need be kept if the obtained information is considered directory information, is required for normal clerical maintenance of a file, or is seen by authorized personnel in the normal performance of their responsibilities.
4. No records will be released to anyone without the formal written consent of the student concerned. A student will be notified whenever a court subpoena has the records.
5. Students may have general access to their records and the right to challenge records they believe to be inaccurate, incomplete, or misleading, or otherwise in violation of their privacy.

### **Counseling Records**

Counseling records are distinctly different from educational records, and access is more limited. As mandated by state and federal law and by the ethics of the counseling profession, information shared by a student in counseling is strictly confidential and will not be disclosed without a student's prior written consent. Knowing that what they share will not be disclosed without their permission, students can safely discuss their concerns in a highly supportive environment.

When appropriate, counselors encourage students to share information with the faculty, or sign a release form allowing the counselor to share information, related to any disability or medical problem which might have an impact on the learning process. Counselors work with both students and faculty members in providing adaptive equipment and other learning support services.

Exceptions to the rule of confidentiality do exist, however, in which a counselor would share information with appropriate individuals or agencies without a student's permission. These exceptions include:

professional consultation  
child or elder abuse /neglect  
threatening to harm yourself

legal cases related to:  
child custody  
hospitalization



threatening to cause physical  
violence to another  
information related to the  
planned commission of a crime

court-ordered evaluation

Please feel free to discuss confidentiality with your counselor. More extensive written materials related to confidentiality are available upon request in the Counseling Center.

### **Medical Records**

Medical records, like counseling records, are distinctly different from educational records and are considered strictly confidential; they may not be disclosed by the nurse without a student's prior written consent. While students are generally encouraged to make faculty aware of any medical problem which might significantly affect the learning process, their right to keep this information confidential is protected by state and federal law. However, there is one notable exception to this rule: if it becomes necessary to share information to protect the welfare of the individual or the community, e.g., when communicable diseases are involved, confidentiality is waived.

## **Division of Continuing Education**

Through the Division of Continuing Education, the College meets a wide variety of community educational and training needs. Programs of both a credit and non-credit nature are offered on a year-round basis with the Fall and Spring semester dates closely paralleling those of the Day School. All courses offered during the summer, whether during day or evening hours, are operated by the Division of Continuing Education.

The Division of Continuing Education is designed to meet the needs of the community for higher education, while operating on a self-sustaining basis in accordance with the General Laws of the Commonwealth. The Division of Continuing Education provides:

1. Credit and non-credit courses in both general and specialized educational fields;
2. The opportunity to earn an associate degree or certificate in a wide range of programs;
3. Access to College courses at numerous extension centers for students who may not have convenient access to the Springfield campus;
4. Seminars, conferences, and on-site employee training programs for business, industry, and professional groups.

Offerings are designed to furnish opportunities to: (1) resident students of Springfield Technical Community College to supplement their work in the day division of the College by taking additional elective courses; (2) students of other colleges and universities to take courses for credit, transferable to their resident college; (3) high school students who wish to remove academic defi-

ciencies before entering college in September; and (4) regional adult students who wish to update career skills, pursue a new career, or gain experience in a subject of specialized interest.

## **WESTERN MASSACHUSETTS CENTER FOR BUSINESS AND TECHNOLOGY (WMCBT)**

The Western Massachusetts Center for Business and Technology channels the resources of STCC's faculty and staff to design, conduct, and evaluate management development training programs and computer workshops for employees of business and industry in Western Massachusetts.

The WMCBT provides:

- customized training programs to introduce potential applications of new technology
- training programs to enhance the skills of managers and supervisors to allow effective functioning within new technological and organizational environments, and
- opportunities for company personnel to assess the cost-effectiveness and feasibility of integrating new equipment into the production process

Regardless of company size, the Division of Continuing Education's professional staff will work with company representatives to design a relevant and cost-effective training program for employees. The Division of Continuing Education is pleased to have provided a diverse range of training programs for employees of many companies throughout the Pioneer Valley.

WMCBT is a member of the IBM CIM in Higher Education Alliance, and serves as a demonstration site and authorized training center for the latest technical innovations in software tools for product design and manufacturing, including AutoCAD, CADKey, SmartCAM, Costimator, and IBM CIM including MAPICS, CATIA, and CADAM.

# Curricula of the College

## **BUSINESS**

### **BUSINESS ADMINISTRATION**

- Accounting
- Finance
- General Business
  - Option: Transfer Compact
- Management
  - Option: Small Business Management
- Marketing

### **COMPUTER INFORMATION SYSTEMS**

- Computer Information Systems/Data Processing
  - Option: Microcomputer Specialist

### **OFFICE SYSTEMS**

- Court Reporting
- Office Administration
  - Executive Office Administration
  - Legal Office Administration
  - Medical Office Administration
  - Word Processing Management
  - Clerical Office Assistant\*

## **ENGINEERING TECHNOLOGIES**

- Automotive Technology
- Bio-Medical Instrumentation Technology
- Civil Engineering Technology
- Computer Systems Engineering Technology
- Electrical/Robotics Technology
- Electronic Systems Engineering Technology
- Energy Systems Technology
- Environmental Technology
- Graphic Arts Technology
  - Options: Commercial Art
  - Printing Technology
- Landscape/Plant Science Technology
- Laser Electro-Optics Technology
  - Options: Laser Applications
  - Photonics (Planned implementation Fall 1994)
  - Optical Fabrication and Testing (Planned implementation Fall 1994)
- Mechanical Engineering Technology
  - Options: Computer Integrated Manufacturing
  - Computer-Aided Design/Computer-Aided Manufacturing
- Telecommunications Technology
- Drafting Technology\*



## **ENGINEERING & SCIENCE TRANSFER**

Engineering & Science Transfer  
Engineering Transfer Option  
Technical Engineering Option  
Computer Science Transfer Option  
Science Transfer Option  
Biology Option  
Chemistry Option  
Physics/Mathematics Option  
Pre-Medical/Pre-Dental/Pre-Veterinary Option  
Pre-Pharmacy Option

## **HEALTH/HUMAN SERVICES**

Clinical Laboratory Science  
Cosmetology Management  
Dental Hygiene  
Diagnostic Medical Sonography (Planned implementation Fall 1994)  
Option: Advanced Standing  
Human Services Associate  
Medical Assistant  
Nuclear Medicine Technology  
Option: Advanced Standing  
Nursing  
Occupational Therapy Assistant (Planned implementation Fall 1994)  
Physical Therapist Assistant  
Radiation Therapy Technology  
Radiography  
Respiratory Care  
Surgical Technology  
Cosmetology\*  
Dental Assistant\*

## **LIBERAL ARTS AND SCIENCES**

Early Childhood Education  
Law Enforcement/Criminal Justice  
Liberal Arts/General Studies  
Options: Industrial Arts Transfer  
University Without Walls  
Liberal Arts Transfer  
Option: Fine Arts

\*One-year certificate programs

# Health - Human Services/Nursing



# Health - Human Services/Nursing

**All students entering Health/Human Services programs must take the College math, English, and reading placement tests.** Students in the following programs must place at the level of MM 093 or better: Clinical Laboratory Science, Dental Hygiene, Nuclear Medicine Technology, Physical Therapist Assistant, Radiation Therapy Technology, Radiography, Respiratory Care, and Surgical Technology.

**Clinical rotations** are an integral part of all Health/Human Services/Nursing program curricula. The clinical component is based upon contracts negotiated with area health care facilities, physicians, dentists and educational facilities.

**Final acceptance into the Health/Human Services/Nursing Program is conditional upon the submission of all health forms to the College Health Service and review and acceptance of students by both the Dean of Health/Human Services and the Affiliation Agency Representative.**

Students enrolled in Health/Human Services/Nursing, in addition to meeting the general requirements of the College must:

1. meet the terms of the clinical affiliation agreement with the cooperating agencies.
2. meet the specific academic requirements of their program of study.

**The terms of the affiliation agreements** require each student to:

1. Submit a pre-entrance physical examination and record of immunization completed by a licensed physician to the College Health Service for review by the Affiliating Agency and the College.

**ALL REQUIRED LABORATORY WORK, IMMUNIZATIONS, AND CHEST X-RAYS IN ADDITION TO THE PHYSICAL EXAMINATION MUST BE COMPLETED PRIOR TO THE FIRST DAY OF CLASSES IN THE FIRST SEMESTER. A REPEAT MANTOUX MUST BE DONE BEFORE THE BEGINNING OF THE THIRD SEMESTER.**

All students must be immunized for Hepatitis B or have on file in the College Health Services office a Statement of Declination.

The Affiliating Agency reserves the right to **refuse** to accept a student for placement who does not meet the Agency standards or who has not been immunized.

2. Carry a malpractice liability insurance policy. The College will arrange for this insurance coverage. The premium is to be paid by the insured student. Limits of coverage are to be determined by the College. At the present time, cost to the student is about \$15.00 per year, except for Radiation Therapy students, for whom the cost is \$60. This rate is subject to change.
3. The College requires that all students in Health/Human Services and Nursing must wear the college student uniform as set forth by the Department and meet the requirements of the *Professional Dress Code* when on affiliation in clinical laboratory settings and at other times as designated by the respective departments.



4. Abide by the rules and regulations of the cooperating agencies.
5. Assume the cost of transportation to the clinical agencies and other related expenses such as meals, etc.
6. Fulfill the academic and professional requirements of the department enrolled in as well as those of the College.

The specific academic requirements of the Health/Human Service departments and Nursing Division are set forth on the specific page dedicated to the program within this publication.

The College reserves the right to withdraw any student at any time from his/her program in Health/Human Services or Nursing who cannot be placed in a cooperating agency because of failure of the student to meet or comply with the terms of the affiliation agreement.

Many of the health profession's accrediting agencies have specific requirements both in theory and practice which must be met by the program of study in order to be accredited. Therefore, some curricula, in order to meet the hour requirements of their accrediting agency, have intersession and/or summer sessions in addition to the regular college semester. Students will *be charged for intersession and/or summer sessions at the regular Division of Continuing Education rate*. This is in addition to the regular college tuition which covers the semester course of study.

The clinical laboratories are scheduled according to available agency time and the needs of the program. Therefore, students may be scheduled on evenings and/or weekends by arrangement. You will be given notice in advance of such scheduling.

## Clinical Laboratory Science

This program offers an integrated curriculum which provides the students with a background in general education and the skills necessary to function in a clinical laboratory science field and prepares them at career entry level. Fundamentals in clinical waste management, OSHA regulations, clinical microscopy, microbiology, hematology, immunohematology and clinical chemistry comprise the core curriculum. Clinical experience is obtained in a hospital laboratory with which the College has a contractual agreement. The clinical experience may not be sequential, but by arrangements, according to available clinical resources. In order to matriculate, students must have a minimum passing grade of "C" (75) in all required courses. Department courses and overall QPA of 2.0 is required.

Applicants must have completed a college preparatory course in high school which included biology, chemistry, and mathematics. SAT scores must be 400 or greater in mathematics and verbal skills with a total score of 800 or higher. Graduates of the program are eligible for national certification by successfully passing a written examination given by a certifying agency.

Clinical laboratory practicum includes an intersession spring and summer session which may not be sequential to the academic program, depending on

## CLINICAL LABORATORY SCIENCE

availability of placement. This practicum starts during the intersession period in the second year of study. Students must be mindful that placement will require travel and that they are responsible for their own transportation and maintenance. Students are charged tuition for the Summer Session at the regular Division of Continuing Education rate. This program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association and National Accrediting Agency for Clinical Laboratory Sciences. Upon successful completion of the program requirements as listed below, the degree of **Associate in Science in Clinical Laboratory Science** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 101	Survey of Chemistry 1	3	3	4
MB 133	Anatomy & Physio./CLS	3	3	4
AL 102	Intro. to Clinical Lab	4	2	5
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
		<hr/> 16	<hr/> 8	<hr/> 19

### SEMESTER 2

LE 200	Comp. 2: Intro to Lit.	3		3
MC 201	Survey of Chemistry 2	3	3	4
AL 210	Med. Microbiology	4	5	6
MM 142	Statistics 1	3		3
		<hr/> 13	<hr/> 8	<hr/> 16

### SEMESTER 3

MC 350	Instrumental Analysis	2	4	4
MB 140	Biochemistry	3		3
AL 300	Hematology & Coagulation	3	3	4
AL 302	Clinical Chemistry	3	3	4
BB 311	Basic Legal Concepts	1		1
		<hr/> 12	<hr/> 10	<hr/> 16

### INTERSESSION (2 Weeks)

AL 420	Clinical Practicum 1		40	1
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### SEMESTER 4

AL 408	Clinical Immunology/Immunochemistry	3	4	5
AL 421	Clinical Practicum 2		32	6
		<hr/> 3	<hr/> 36	<hr/> 11

### SUMMER

AL 422	Clinical Practicum 3		40	3
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Descriptions of courses offered by this department begin on page 184.

# Cosmetology Management

## 2nd Year Option for Licensed Cosmetologists

(The one-year certificate program in Cosmetology is described on page 90.)

Licensed cosmetologists who have qualified for their licensure status by completing the educational process for a cosmetology operator at an institution other than Springfield Technical Community College may apply for the Associate in Science in Cosmetology Management degree for Licensed Cosmetologists. This curriculum is composed of two parts: 1) thirty-two (32) credits earned by challenge examinations, and 2) two (2) semesters of academic study. The academic study may be completed on a full- or part-time basis.

*Admission Requirements:* The applicant to this program must be a high school graduate or the equivalent. S/he must hold a current license within the Commonwealth as an operator or a licensed Cosmetologist. License requirements in other states will be evaluated on an individual basis.

*Admission Process:* The applicant may file an application to take the Cosmetology challenge examinations (1 and 2) in the STCC Division of Continuing Education. These exams may be taken separately or together. The examinations are offered several times during the academic year. For specific times, contact the College's Testing Coordinator at 781-1314, extension 3867. Study guides will be available on registration.

When the applicant has successfully passed the two (2) challenge examinations with a grade of 73% or better on each of the examinations, s/he may apply to the Admissions Office of STCC for admission into the Associate in Science in Cosmetology Management program of study, on either a full- or part-time basis.

In addition to the 32 credits earned on the challenge examinations, a minimum of 15 of the required 30 credits must be earned at STCC to fulfill the residency requirements of the College.

Upon the successful completion of the requirements for this program, the degree of **Associate in Science in Cosmetology Management** will be awarded.

### SEMESTER 3

LE 100	English Composition 1	3	3
NP 109	Human Relations	3	3
	Elective: Business	3	3
BD 300	Microcomputer Applications	3	3
BK 110	Principles of Management	3	3
		<hr/> 15	<hr/> 15



**SEMESTER 4**

LE 203	Fundamentals of Speech	3	3
NS 100	Introduction to Sociology	3	3
LE 201	Business English	3	3
	Elective: Business	3	3
	Elective: Social Science	3	3
		<hr/> 15	<hr/> 15

## Dental Hygiene

The Dental Hygiene program educates men and women to become vital members of the dental health profession. The two-year basic core curriculum leading to an Associate in Science degree follows the guidelines adopted by the American Dental Association's Commission on Dental Accreditation. The graduate is eligible for licensing examination in each of the fifty states. She/he may transfer credits toward a Baccalaureate degree. The Dental Hygiene program is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and by the United States Department of Education.

The curriculum is designed to provide the student a broad educational experience. The student is thus prepared to render preventive oral health services and dental health education. Students receive clinical experience, at the STCC Dental Hygiene Clinic. Students are responsible to complete clinical services on a minimum number of patients. Patient recruitment is the responsibility of the student. Assistance will be provided by the College. The purchase of an instrument kit is mandatory for each dental hygiene student.

All courses listed in the program curricula are required for graduation. The dental hygiene courses are restricted to the semester in which they appear in the curricula. The curriculum customarily is completed within two regular academic years. However, advanced placement will be given to those students qualifying through challenge exams and transfer credits.

Applicants for admission to the Dental Hygiene program must be high school graduates or the equivalent. The candidate must have completed courses in Algebra 1, Algebra 2, or geometry, biology, and chemistry with grades of "C" or better. The SAT's are required for admission with minimum scores of 400 on both the verbal and math portions of the test.

Students must achieve a minimum grade of "C" (73%) or better in each Dental Hygiene course. In addition, students must attain a minimum grade of "C" (73%) or better in related science or general studies courses. The student who is unable to meet this minimum requirement will be withdrawn from the program. Application for re-entry will be based on the recommendations of the faculty and program coordinator.

Upon completion of the requirements for this program, as listed below, the degree of **Associate in Science in Dental Hygiene** will be awarded.

## DENTAL HYGIENE

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
MB 140	Biochemistry	3		3
AH 103	Oral Anatomy 1	2		2
AH 101	Clinical Practice 1	2	6	4
AH 104	Dental Radiology	2	2	3
		<hr/> 15	<hr/> 10	<hr/> 19

### SEMESTER 2

MB 121	Microbiology	3	3	4
MB 232	Anatomy & Physiology 2	3	2	4
AH 200	Nutrition	2		2
AH 201	Oral Pathology	2		2
AH 202	Clinical Practice 2	2	8	5
AH 203	Oral Anatomy 2	2		2
		<hr/> 14	<hr/> 13	<hr/> 19

### SEMESTER 3

NP 100	General Psychology	3		3
AH 300	Periodontology	2		2
AH 301	Dental Materials 1	2	3	3
AH 302	Pharmacology	2		2
AH 303	Clinical Practice 3	2	12	6
		<hr/> 11	<hr/> 15	<hr/> 16

### SEMESTER 4

LE 203	Fundamentals of Speech	3		3
NS 100	Intro. to Sociology	3		3
AH 400	Community Dental Health	3		3
AH 401	Clinical Practice 4	2	12	6
AH 402	Applied Dental Auxiliary Skills	1	3	2
		<hr/> 12	<hr/> 15	<hr/> 17

Descriptions of courses offered by this department begin on page 196.

## Diagnostic Medical Sonography

(Planned implementation Fall 1994)

Diagnostic medical sonography is a rapidly growing technology, used to locate, evaluate, and record pertinent anatomical, pathological, and functional data to aid the physician in the diagnosis of disease and injury. The graduate of this program will generally be employed in the radiology departments of health care facilities, HMOs and clinics to apply high frequency ultrasound for diagnostic purposes. However, sonographers may provide sonographic services to patients in any medical setting, under the supervision of a physician.

## DIAGNOSTIC MEDICAL SONOGRAPHY

Graduates of this program of study will be awarded the Associate in Science degree and will be eligible to write the national certifying examination as administered by the American Registry of Diagnostic Medical Sonographers Association to earn the title of Certified Diagnostic Medical Sonographer.

Applicants must be high school graduates or hold a certificate of equivalency. Applicants must also have completed Algebra 2, biology and chemistry on the high school level. College Board examinations (SATs) will be required.

On the College placement tests, students must demonstrate competencies for Algebra 2 and test out equal to MM 125, and achieve admission to college-level English (LE 100).

Students will also have to have a physical examination/immunization and recommendation from the examining physician that s/he is physically fit for the program and subsequent clinical affiliation.

### Minimum Grade Requirement

The Diagnostic Medical Sonography student must achieve a minimum grade of "C" (73%) in each Diagnostic Medical Sonography course and in the health science and science courses.

Upon the successful completion of the requirements for this program as listed below, the degree of **Associate in Science in Diagnostic Medical Sonography** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
AS 100	Sonographic Physics	2	2	3
AS 101	Principles of Sonographic Imagery	3		3
MM 125	Mathematics and Algebraic Functions	3		3
		<hr/> 14	<hr/> 4	<hr/> 16

### SEMESTER 2

LE 200	English Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AS 201	Principles of Sonographic Imagery 2	2		2
MB 340	Cross-Sectional Anatomy	2	2	3
AS 200	Sonographic Physics 2	2	2	3
MP 146	Radiation Protection	1		1
		<hr/> 13	<hr/> 6	<hr/> 16

### SUMMER 1 (8 Weeks)

AS 202	Sonographic Procedures 1	1	2	2
AS 203	Practicum 1		30	2
		<hr/> 1	<hr/> 32	<hr/> 4



## DIAGNOSTIC MEDICAL SONOGRAPHY

### SEMESTER 3

NP 100	General Psychology	3		3
AS 300	Sonographic Procedures 2	2	2	3
AS 301	Practicum 2		12	3
AA 210	Health Science 2	2	2	3
AA 101	Medical Terminology 1	3		3
		<hr/>	<hr/>	<hr/>
		10	16	15

### SEMESTER 4

LE 203	Fundamentals of Speech	3		3
NS 100	Introduction to Sociology	3		3
AS 400	Sonographic Procedures 3	2	2	3
AS 401	Practicum 3		12	3
		<hr/>	<hr/>	<hr/>
		8	14	12

### SUMMER 2 (8 Weeks)

AS 402	Sonographic Procedures 4	1	2	2
AS 403	Practicum 4		30	2
		<hr/>	<hr/>	<hr/>
		1	32	4

Descriptions of courses offered by this department begin on page 198.

### Diagnostic Medical Sonography Advanced Standing Option

The Diagnostic Medical Sonography program offers the option of admission with advanced standing for applicants who have successfully completed the graduation requirements for the Associate in Science degree in Nursing, Radiography, Radiation Therapy Technology, or Nuclear Medicine Technology. Applicants from other health fields will be evaluated on an individual basis, and the program will be planned according to individual needs.

Applicants who have graduated from hospital-based programs will also be assessed on an individual basis and the program planned accordingly. Academic credits may be earned for prior learning by the official challenge system of the College, by the CLEP program through the Division of Continuing Education, or by enrollment in the course. The general education requirements are: MB 132/232 Anatomy & Physiology, LE 100/200 English Composition, LE 203 Speech, NP 100 General Psychology, and NS 100 Introduction to Sociology.

## Human Services Associate

This generalist curriculum is designed to educate men and women for careers in Human Services. The Human Services Associate is prepared to deliver a range of services in mental health, mental retardation, rehabilitation, education, corrections, gerontology, substance abuse, and developmental disabilities to children, adolescents, and adults in public and private agencies. Academic courses are coordinated with supervised practicum/field work experiences to provide the student competency-based education. The multi-discipline, transpro-

fessional, life cycle approach to human services prepares the graduate for both employment and continuing education.

High school graduates applying to this program must have a minimum grade of "C" in all major subjects. Intra-college transfers must have a minimum cumulative average of 2.0. The Scholastic Aptitude Test is not mandatory, but is recommended. The College placement and reading tests are required. This becomes important for those program graduates who seek transfer to four-year programs.

Supervised fieldwork is established through a contract between the College and cooperating community agency. Therefore, to be eligible for fieldwork, the student must meet College and agency requirements.

*College requires the student to have:*

1. Current completed physical examination record, including physical assessment, immunization and laboratory reports on file in the office of the College Nurse.
2. Current liability insurance policy as offered by the College.

*Agency requires the student to have:*

1. Referral from the Human Services Department faculty.
2. Agency interview prior to acceptance for placement.

The agency has the option to refuse to accept a student for placement. If the College is unable to successfully place the student with a contracted community agency, the student will be withdrawn from the program.

**Minimum Grade Requirement:** The Human Services student is required to earn a minimum grade of "C" (73%) in each of the following courses: AM 103 — Human Services 1; AM 202 — Human Services 2; AM 307 — Human Services 3; AM 308 — Human Services 3: Fieldwork Seminar; AM 304 — Group Dynamics: Theory and Practice; AM 404: Group Process: Theory and Practice; AM 407 — Human Services 4; and AM 408: Human Services 4: Fieldwork Seminar. The student is required to earn a 2.0 ("C") average for all other courses included in the Human Services Associate program curriculum. The student who is not able to satisfy this minimum grade requirement will be withdrawn from the program.

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Human Services Associate** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
AM 103	Human Services 1	3	2	4
MB 138	Human Anatomy 1	3	2	4
AA 211	Health Science 3	1		1
		<hr/> 13	<hr/> 4	<hr/> 15

## HUMAN SERVICES ASSOCIATE

### SEMESTER 2

LE 203	Fundamentals of Speech	3		3
NS 100	Intro. to Sociology	3		3
AM 203	Human Services 2	3	4	4
MB 238	Human Anatomy 2	3	2	4
BD 193	Computer Concepts for Human Services	1	2	2
AM 204	Human Services 2: Fieldwork Seminar	1		1
		14	8	17

### SEMESTER 3

AM 304	Group Dynamics: Theory and Practice	2		2
AM 307	Human Services 3	2	12	5
AM 308	Human Services 3: Fieldwork Seminar	2		2
AM 309	Human Services Communication Systems	1	2	2
NP 305	Child Psychology	3		3
		10	14	14

### SEMESTER 4

AM 404	Group Process: Theory and Practice	2		2
AM 407	Human Services 4	2	12	5
AM 408	Human Services 4: Fieldwork Seminar	2		2
AM 409	Human Services Communic.: Applications	1	2	2
NP 400	Principles of Normal/Abnormal Behavior	3		3
		10	14	14

Descriptions of courses offered by this department begin on page 228.

## Medical Assistant

This two-year program prepares students to become health care providers who have multiple skills, qualities, and abilities, and are able to meet the rigorous demands of our health care delivery systems. Graduates are capable of functioning in the hospital, clinic, neighborhood health center, health maintenance organization, insurance company, group practice or single physician's office. The program is jointly reviewed by the American Medical Association and the American Association of Medical Assisting, and is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates of the program are eligible to take the national certification examination for Medical Assistants and Phlebotomists.

The curriculum is designed to teach students to assist in administrative and clinical procedures in varied health care agencies. During the externship period students perform such duties as word processing, recordkeeping, billing, basic blood and urine tests, as well as assisting the physician in carrying out the techniques of patient care such as performing electrocardiograms, assisting with minor surgery, phlebotomy, and assisting with physical examinations. STUDENTS MUST BE AWARE THAT THE EXTERNSHIP PERIOD WILL REQUIRE TRAVELING TO THE VARIOUS SITES, AND THAT THEY ARE



RESPONSIBLE FOR THEIR OWN TRANSPORTATION. Graduates are qualified to accept positions in medical offices, clinics, health maintenance organizations, insurance companies, hospitals, ambulatory care centers, or any other area where their broad basic skills are needed.

*Minimum Grade Requirements:* To continue in the progression of courses offered in the Medical Assistant program, a student must obtain a grade of "C" (73%) or better in the following courses: AA 105 — Intro. to Medical Assisting; AA 202 — Medical Assistant Techniques 1; AA 305 — Medical Assistant Techniques 2; AA 403 — Medical Assistant Techniques 3; and AA 301 — Introduction to Human Disease. Students must maintain an average grade of "C" or better in all other courses. All students must achieve a level of 073 in math before entering the second semester of the freshman year. Medical Assistant courses are planned in conjunction with the clinical agencies, and may deviate from the College hours.

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Medical Assistant** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
AA 101	Medical Terminology 1	3		3
AA 105	Intro. to Medical Assisting	1		1
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
BZ 100	Basic Keyboarding Skills*	1		1
LE 100	English Composition 1	3		3
MB 104	Human Biology 1	3	2	4
		<hr/> 14	<hr/> 2	<hr/> 15

### SEMESTER 2

AA 202	Medical Assistant Techniques 1	3	4	5
AA 301	Intro. to Human Disease	3		3
BZ 260	Medical Word Processing	1	4	3
MB 204	Human Biology 2	3	2	4
		<hr/> 10	<hr/> 10	<hr/> 15

### SEMESTER 3

AA 305	Medical Assistant Techniques 2	3	4	5
AA 319	Dosage and Calculations**	1		1
AA 320	Pharmacology**	3		3
AL 407	Basic Lab Procedures***	2	2	3
BZ 265	Administrative Medical Asst. Procedures	3		3
		<hr/> 12	<hr/> 6	<hr/> 15

## MEDICAL ASSISTANT

### SEMESTER 4

AA 119	Applied Legal Concepts (Med. Asst.)	1		1
AA 403	Medical Assistant Techniques 3	2	28	8
NP 100	General Psychology	3		3
	Elective: English	3		3
		<hr/>	<hr/>	<hr/>
		9	28	15

\* BZ 104 Typing 1 may be substituted

\*\* AA 319 and AA 320 must be taken concurrently

\*\*\* AL 407 required before affiliation

Descriptions of courses offered by this department begin on page 243.

## Nuclear Medicine Technology

Nuclear Medicine Technologists utilize radioactive materials or tracers for the diagnosis or treatment of diseases. When introduced into the body, a radio-tracer behaves like its nonradioactive counterpart. Therefore, its location in the body can be traced by using an appropriate detector.

The Nuclear Medicine Technologist learns to prepare and administer the radio-tracer, perform the radionuclide study which may include the use of a computer, and then produce a final qualitative or quantitative product, so that a diagnosis and/or treatment may be made by a physician who specializes in the field.

The Nuclear Medicine Technology program at STCC is 24 months in length, beginning in September and ending two full years later. Students spend two or three days each week on clinical affiliation at Baystate Medical Center, the largest medical center in Western New England; Holyoke Hospital; Hartford Hospital; or Mercy Hospital. The rest of the week is spent at the College in courses. The curriculum includes two summer sessions. The cost for the summer session is at the Division of Continuing Education rate.

Minimum course requirement for graduation in all subjects is a grade of "C" or better. A more complete description of the program requirements may be found in the Handbook for the Radiologic Sciences which is distributed at the beginning of each Fall semester. At graduation the student receives an Associate in Science in Nuclear Medicine Technology, and is eligible to apply for the national registry examination given by the American Registry of Radiologic Technologists and the Nuclear Medicine Technology Certification Board. The program also meets the requirements for state licensing application. The program is fully accredited by the Committee on Allied Health Education and Accreditation (CAHEA).

Applicants should have completed Algebra 1 & 2, chemistry, and a biological science. Submission of SAT scores is required for admission. Students are responsible for cost of uniforms, radiation monitors, physical examinations, health insurance, liability insurance, books, calculator, and laboratory manuals.

Upon successful completion of the requirements listed below, the degree of **Associate in Science in Nuclear Medicine Technology** will be awarded.

# NUCLEAR MEDICINE TECHNOLOGY

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
AZ 102	Intro. to Nuclear Medicine Tech.	3		3
AZ 103	Practicum 1		16	2
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy & Physiology 1	3	2	4
AX 114	Radiation Protection	1		1
AZ 104	Orientation to Practicum	1		
		<hr/> 13	<hr/> 20	<hr/> 16

## SEMESTER 2

AZ 207	Practicum 2		16	2
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
MB 232	Anatomy & Physiology 2	3	2	4
LE 100	English Composition 1	3		3
AZ 210	Nuclear Imaging of Organs	3		3
AZ 211	Nuclear Cardiology & Other Organ. Anal.	1		1
		<hr/> 13	<hr/> 18	<hr/> 16

## SUMMER 1 (13 Weeks)

AZ 209	Practicum	2	38	5
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## SEMESTER 3

AZ 301	Practicum 3		24	5
MP 300	Radiologic Physics 1	3	2	4
AA 114	Cardiopulmonary Resuscitation	1		
BD 192	Computer Concepts for Allied Health	1	2	2
AZ 306	Statistics and Instrumentation	3		3
		<hr/> 8	<hr/> 28	<hr/> 14

## SEMESTER 4

AZ 401	Practicum 4		24	5
AZ 414	In Vitro and Non-Imaging Studies	2		2
MP 400	Nuclear Physics 1	3	2	4
LE 200	English Composition 2	3		3
AX 414	Radiation Biology	1		1
AA 116	Intro. to Phlebotomy	1		1
AL 409	Lab Skills in Nuclear Medicine	1		1
		<hr/> 11	<hr/> 26	<hr/> 17

## SUMMER 2 (13 Weeks)

AZ 416	Radioassay Laboratory Practicum (2 Wks.)		40	1
AZ 410	Practicum (11 Wks.)	4	36	5
		<hr/> 4	<hr/> 76	<hr/> 6

Descriptions of courses offered by this department begin on page 246.



# Nursing

The nursing curriculum is planned to prepare men and women to be professional nurses, competent to render safe and effective nursing care to people within the normal life cycle, both in health and illness. The community-centered approach combines both liberal and technical education for the student within the College and community health facilities. The student who successfully completes the prescribed curriculum earns the degree of Associate of Science and is eligible to take the licensing examination to qualify as a Registered Nurse. The program is approved by the Massachusetts Board of Registration in Nursing. It also has full accreditation by the National League for Nursing. STCC has recently established an articulation agreement with Elms College and the University of Massachusetts, whereby students accepted into STCC's associate degree program are simultaneously accepted into either of these bachelor's degree nursing programs in order to complete a four-year course of study, if they so desire.

Prerequisites for admission to the STCC Nursing Program call for the applicant to be a high school graduate or equivalent. The candidate also must have completed courses in algebra 2, chemistry and biology. The SAT's are required for admission with scores ranging in the 450s on each of the verbal and math portions of the test.

Students are required to maintain CPR certification (American Heart Association — professional rescuer) throughout the nursing program, beginning October 1 of the freshman year.

In order for a student to matriculate in the Division of Nursing, the student must maintain a quality point average of 2.30 in each nursing course.

Quality Point Average	Letter Grade	Numerical Grade
2.30	C+	77+

The final course grade is calculated as follows:

1. Term exams to be followed by one comprehensive final exam. Grading of these exams must average 2.30 (77+) in order to pass the course. These exams will have equal weight.
2. A student must pass the clinical portion of the course in order to qualify to write the final exam (grading for clinical portion is Pass-Fail). Transcript grade for clinical failure will be recorded as F.
3. An average of 2.30 (77+) on these exams is required to pass the course.

The final course grade, if below 2.30 (77+) will be recorded as a letter grade with transcript stamped: NOT ELIGIBLE FOR MATRICULATION IN NURSING. DATE

4. No more than one failed/withdrawn nursing course may be repeated.
5. Readmission to the program is at the discretion of the nursing faculty.

Eligibility for Promotion:

- Students must attend scheduled lectures and clinical hospital laboratories.
- Students must pass academically and clinically.

- Students must achieve a minimum grade of "C" (73+) or better in the natural and biological sciences.

The Nursing math module (MM 077) must be successfully completed prior to AN 100, or by the end of the twelfth week of AN 100. Students must attain at least a "C" in related science courses, or a cumulative grade point average of 2.0. The clinical segments of the Nursing courses are planned in conjunction with the clinical agencies, and may deviate from the College hours.

Policy for use of challenge examination for AN 100 for admission of L.P.N.'s with advanced placement to STCC Division of Nursing:

1. The challenge examination for L.P.N.'s will be administered only after an L.P.N. with current registration has been fully admitted as a student in the Division of Nursing.
2. Records of the student show that the accumulated theory and clinical experience of the student meet the curriculum requirements for School of Practical Nursing in Massachusetts.
3. Fee and procedure for the examination will be commensurate with established College policy. The Division of Continuing Education is in charge of registration for the Nursing Challenge Examination for L.P.N.'s, and requires registration one week prior to exam administration, accompanied by a fee of \$7.50.
4. Guidelines that must be followed to successfully complete the challenge process for AN 100:
  - A. Write the AN 100 Challenge Examination for L.P.N.'s. This will be scheduled for administration once only, at the end of August. A student has the privilege of writing the examination once; no retakes are permitted. This examination provides the L.P.N. with an opportunity to validate knowledge of the concepts usually presented in AN 100, which is the foundation for the subsequent nursing courses.
  - B. Attainment of a 77+ is the minimum passing grade in theory. (77+ = C+ = 2.3 QPA) The challenge examination for AN 100 may not be retaken.
  - C. Recommendations for individualized learning will be made after analysis of performance on challenge exam.
  - D. Participate in a one-day knowledge and skill program.
5. Students who successfully complete the above guidelines will be entitled, upon paying a fee of \$10 per credit (\$70.00 total) to have their transcripts reflect 7 credits granted for AN 100.

Upon successful completion of requirements for the Nursing program, as listed below, the degree of **Associate in Science in Nursing** will be awarded.

## NURSING

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
MB 132	Anatomy & Physiol. 1	3	2	4
NP 100	General Psychology	3		3
AN 100	Primary Preventive Interventions 1A	4	10	7
MM 077	Math for Nursing	1		1
		<hr/> 11	<hr/> 12	<hr/> 15

### SEMESTER 2

LE 100	English Composition 1	3		3
MB 232	Anatomy & Physiol. 2	3	2	4
NP 400	Prin. of Norm./Abn. Behav.	3		3
AN 201	Secondary/Tertiary Preventive Interventions 1A	4	12	8
		<hr/> 13	<hr/> 14	<hr/> 18

### SEMESTER 3

MB 121	Microbiology	3	3	4
NS 100	Intro. to Sociology	3		3
AN 300	Secondary/Tertiary Preventive Interventions 2A	4	15	9
		<hr/> 10	<hr/> 18	<hr/> 16

### SEMESTER 4

AN 400	Secondary Preventive Interventions 3A	4	15	9
AN 401	Intro. to Nursing Management and Law	2		2
	Elective: Soc. Science	3		3
LE 200	English Composition 2: Intro. to Lit.	3		3
		<hr/> 12	<hr/> 15	<hr/> 17

Note: All courses must be taken prior to or during the semester as listed above.

Descriptions of courses offered by this department begin on page 248.

## Occupational Therapy Assistant

(Planned implementation Fall 1994)

Occupational therapy is the art and science of directing participation in selected tasks to restore, reinforce, and enhance performance; facilitate learning of those skills and functions essential for adaptation and productivity; diminish or correct pathology; and promote and maintain health. Reference to occupation in the title is in the context of goal-directed use of time, energy, interest, and attention. Its fundamental concern is the development and maintenance of the capacity throughout the life span to perform with satisfaction to self and others those tasks and roles essential to productive living and to the mastery of self and the environment. Occupational therapy serves a wide population in a variety of settings, such as hospitals and clinics, rehabilitation facilities, long-term



care facilities, extended care facilities, sheltered workshops, schools and camps, private homes, housing projects, and community agencies and centers.

Graduates of the program of study will be awarded the Associate in Science degree and will be eligible to write the national certifying examination as administered by the American Occupational Therapy Association to earn the title of Certified Occupational Therapy Assistant.

S/he will be able to provide direct services to the patient/client either independently, with collaboration, or with supervision of an Occupational Therapist Registered. Collaboration or supervision is dependent on the specific service provided, and the competency of the Occupational Therapy Assistant. Employment opportunities are available not only regionally but nationally.

The Certified Occupational Therapy Assistant (COTA) curriculum is competency based. It prepares graduates to participate in a comprehensive health care plan for the client. A three-fold program is utilized, i.e., prevention and health maintenance programs, remedial programs, and daily life tasks and vocational adjustment programs.

### **Admission Standards and Criteria**

Applicants must be high school graduates or hold a certificate or equivalency. Applicants must have completed Algebra 2, biology and chemistry on the high school level. College Board examinations (SATs) will be required. On the College placement tests, students must demonstrate competencies for Algebra 2 and admission to college-level English (LE 100).

Students will also have to have a physical examination/immunization and recommendation from the examining physician that s/he is physically fit for the program and subsequent clinical affiliation.

### **Minimum Grade Requirement**

The Occupational Therapy Assistant student must achieve a minimum grade of "C" (73+) in each Occupational Therapy Assistant course and in the health science and biology courses.

Upon successful completion of the requirements listed below, the degree of **Associate of Science in Occupational Therapy Assistant** will be awarded.

### **SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
AF 100	Occup. Therapy Asst. 1	3	2	4
AA 101	Medical Terminology 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
		<hr/> 12	<hr/> 4	<hr/> 14

## OCCUPATIONAL THERAPY ASSISTANT

### SEMESTER 2

NP 100	General Psychology	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AF 200	Occup. Therapy Asst. 2	3	2	4
AP 200	Kinesiology	3	2	4
		<hr/> 12	<hr/> 6	<hr/> 15

### SEMESTER 3

LE 200	English Comp. 2: Intro. to Lit.	3		3
AF 300	Occup. Therapy Asst. 3	3	2	4
AF 301	Neuro Pathology	3		3
AP 300	Pathophysiology	3		3
NP 300	Child Psychology	3		3
		<hr/> 15	<hr/> 2	<hr/> 16

### SEMESTER 4

AF 400	Occup. Therapy Asst. 4	3	2	4
NP 350	Adolescent Psychology	3		3
AA 211	Health Science 3	1		1
AA 111	Human Sexuality: Yesterday, Today and Tomorrow	1		1
AA 112	Living & Dying: Values and Choices	1		1
AA 113	Skills for Health	1		1
AA 114	Cardiopulmonary Resuscitation	1		
	Social Science Elective	3		3
		<hr/> 14	<hr/> 2	<hr/> 14

### SUMMER 2 (8 Week Practicum)

AF 401	Occup. Therapy Asst. Practicum 1		40	2
AF 402	Occup. Therapy Asst. Practicum 2		40	2
			<hr/> 80	<hr/> 4

Descriptions of courses offered by the department begin on page 249.

## Physical Therapist Assistant

The objective of this program is to prepare men and women for employment in the physical therapy field. The graduate physical therapist assistant works under the direction and supervision of a registered physical therapist performing patient-related activities and other tasks required for the operation of the service. The two-year curriculum leading to an Associate Degree follows the guidelines adopted by the American Physical Therapy Association. The curriculum is designed to develop technical knowledge and skills and background information for understanding in anatomy, physiology, kinesiology, disease processes, psychological and interpersonal relations. In addition, emphasis is placed on ethical and legal aspects. Approximately one semester of the program is supervised practice in selected clinical settings. The program is fully accredited by the American Physical Therapy Association through 1997.

## PHYSICAL THERAPIST ASSISTANT

To be admitted to the program, an applicant must have completed high school level courses in algebra 1 & 2, chemistry, biology, and four years of English. In addition, the candidate for admission must have achieved SAT scores of 450 on the math and 450 on the verbal sections of the test. An applicant who is lacking the required math must complete algebra 1 and 2 **BEFORE** admission to the program. It is strongly recommended that applicants should have spent time observing or volunteering in a physical therapy department. An interview with the program director is advised. Applicants to the Physical Therapist Assistant program should be aware that this is a physically demanding occupation, often requiring lifting and supporting of heavy patients.

*Minimum Grade Requirement:* The Physical Therapist Assistant student must obtain a minimum grade of "C" (73%) in all required courses. In addition to the above requirement, the student must have earned a minimum of 61 credits with a cumulative quality point average of 2.0 in order to be eligible for graduation.

Without exception, failed courses in Physical Therapist Assistant require that the student reapply to the program. This privilege may be used only once.

It should be noted that a student must satisfactorily complete Anatomy & Physiology courses (MB 132, MB 232) before entering the third semester.

Senior students in Physical Therapist Assistant will take their Spring vacation during the week following their second five week affiliation. This will occur one or two weeks after the regularly scheduled College Spring vacation.

The graduate Physical Therapist Assistant is eligible to sit for the state licensing exam in Massachusetts. Proof of satisfactory completion of the program is required by the licensing board.

Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Physical Therapist Assistant** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
NP 100	General Psychology	3		3
AP 100	Phys. Therapist Asst. 1	2	4	4
NS 100	Intro. to Sociology	3		3
		<hr/> 14	<hr/> 6	<hr/> 17

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AP 200	Kinesiology	3	2	4
	Elective	3		3
AP 201	Phys. Therapist Asst. 2	2	4	4
		<hr/> 14	<hr/> 8	<hr/> 18



PHYSICAL THERAPIST ASSISTANT

SEMESTER 3

AP 300	Pathological Conditions	3		3
AP 301	Phys. Therapist Asst. 3	2	4	4
AP 302	Muscle Testing	1		1
	Elective	3		3
AA 211	Health Science 3	1		1
BB 311	Basic Legal Concepts	1		1
		<hr/> 11	<hr/> 4	<hr/> 13

SEMESTER 4

AP 403	Supervised Clin. Exp.		18	6
AP 404	Supervised Clin. Exp.		18	6
AP 402	Physical Therapist Asst. Seminar	1		1
		<hr/> 1	<hr/> 36	<hr/> 13

Descriptions of courses offered by this department begin on page 256.

Radiation Therapy Technology

This program is designed to prepare students for entry-level positions as staff technologists, working as essential members of the health care team, using radiation for the treatment of disease. Students are exposed to the full range of radiation therapy equipment available and develop proficiency in delivering a planned course of treatment.

During the academic year, students spend alternating days in Practicum at the clinical sites and at the College for classroom instruction. The 10-week summer sessions involve primarily clinical instruction, and students are charged through the Division of Continuing Education. A special liability insurance policy must be carried, as Radiation Therapy students are not covered in the regular College blanket policy.

Students must maintain grades of "C" (73%) or better in all subjects in order to be eligible for graduation from the program. Upon successful completion of the program requirements, the student is awarded the degree of Associate in Science in Radiation Therapy Technology. The program is accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association. Graduates are eligible to apply for the national examination administered by the American Registry of Radiologic Technology, as well as for licensure with the Commonwealth of Massachusetts.

Applicants must have a high school diploma or equivalent, having completed Algebra 2, biology, and chemistry. Students are required to take the SAT's prior to entry.

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate of Science in Radiation Therapy Technology** will be awarded.

# RADIATION THERAPY TECHNOLOGY

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
AY 103	Practicum		8	2
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy & Physiology 1	3	2	4
AX 114	Radiation Protection	1		1
AY 104	Intro. to Radiation Oncology	3		3
		<hr/> 12	<hr/> 12	<hr/> 16

## SEMESTER 2

AY 207	Practicum		12	3
MB 232	Anatomy & Physiology 2	3	2	4
AY 209	Dosimetry & Treatment Planning	3	2	4
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
LE 100	English Composition 1	3		3
		<hr/> 12	<hr/> 16	<hr/> 17

## SUMMER 1 (10 Weeks)

AY 208	Practicum	3	29	5
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## SEMESTER 3

AY 301	Practicum		20	5
AY 303	Radiographic Imaging	1		1
MP 300	Radiologic Physics 1	3	2	4
AY 304	Clinical Oncology 1	3		3
BD 192	Computer Concepts for Allied Health	1	2	2
		<hr/> 8	<hr/> 24	<hr/> 15

## SEMESTER 4

LE 200	English Comp. 2: Intro. to Lit.	3		3
AY 401	Practicum		20	5
MP 400	Nuclear Physics 1	3	2	4
AY 409	Clinical Oncology 2	3		3
AX 414	Radiation Biology	1		1
		<hr/> 10	<hr/> 22	<hr/> 16

## SUMMER 2 (10 Weeks)

AY 407	Practicum	3	29	5
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Descriptions of courses offered by this department begin on page 261.

# Radiography

The Radiography program prepares an individual to become a member of the allied health team, assisting in the diagnostic methodologies of radiology. The program is based on a twenty-three month curriculum, and students must complete requirements within this two-year period.

The affiliate hospitals of Baystate Medical Center, the largest medical center in Western New England, provide the major clinical component. Travel arrangements to and from the affiliates are the responsibility of the student. Minor affiliations are available on a limited basis. Intersessions and summer sessions provide the major clinical component of the program. Additional clinical experience is assigned during the academic semesters. Students are charged for these periods according to College policy.

The College provides all didactic and laboratory classes. An energized x-ray unit, various phantoms (artificial body parts), and auxiliary equipment allow the student the development of psychomotor skills prior to patient exposure. Courses in anatomy and physiology, physics, computers, patient care, and general education complete the curriculum.

Upon completion of the program, students are eligible to apply for the national board examination in radiologic technology, administered by the American Registry of Radiologic Technology. In addition, students shall receive an Associate in Science in Radiography degree.

The program is fully accredited by the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association. Copies of the *Essentials of an Accredited Educational Program for the Radiographer* are available from the office of the program director.

In order for a student to matriculate in Radiologic Technology, he or she must maintain a quality point average of 2.0 (73%-76%) in each of the Radiologic (AX) courses.

Students not meeting the minimum grade requirement of "C" (73%) will be withdrawn from the program. Students must satisfactorily complete Anatomy and Physiology courses (MB 132, MB 232) before entering the third semester.

Applicants for admission to the program should have completed two years of high school algebra or MM 093 or its equivalent and one year each of biology and chemistry, and the S.A.T.'s.

NOTE: Clinical Orientation is required prior to Clinical Practicum.

Upon successful completion of the requirements of the program, as listed below, the degree of **Associate in Science in Radiography** will be awarded.



**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
AX 111	Radiographic Positioning 1	3	2	4
AX 112	Image Production and Evaluation	2	1	2
AA 101	Medical Terminology 1	3		3
AA 210	Health Science 2	2	2	3
MB 132	Anatomy and Physiology 1	3	2	4
AX 114	Radiation Protection	1		1
		<hr/> 14	<hr/> 7	<hr/> 17

**INTERSESSION 1 (1 Week)**

AX 001	Clinical Orientation 1		40	
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**SEMESTER 2**

AX 211	Radiographic Positioning 2	3	2	4
AX 212	Equipment Operation and Maintenance	2	1	2
AX 213	Clinical Practicum 1		16	2
MB 232	Anatomy and Physiology 2	3	2	4
LE 100	English Composition 1	3		3
		<hr/> 11	<hr/> 21	<hr/> 15

**SUMMER 1 (9 Weeks)**

AX 214	Clinical Practicum 2		40	5
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**SEMESTER 3**

AX 311	Special Procedures in Radiography	2		2
AX 313	Clinical Practicum 3		24	3
MP 300	Radiologic Physics 1	3	2	4
AX 314	Radiographic Positioning 3	3	1	3
AA 111	Human Sexuality	1		1
AA 112	Living and Dying	1		1
AA 113	Skills for Health	1		1
		<hr/> 11	<hr/> 27	<hr/> 15

**SEMESTER 4**

AX 411	Radiologic Pathology	1		1
AX 412	Ancillary Theory and Procedures	1		1
AX 413	Seminar/Quality Control	3		3
AX 414	Radiation Biology	1		1
AX 415	Clinical Practicum 4		24	3
LE 200	English Comp. 2: Intro. to Lit.	3		3
BD 192	Computer Concepts for Allied Health	1	2	2
AX 417	Advanced Radiation Protection	1		1
		<hr/> 11	<hr/> 26	<hr/> 15

**SUMMER 2 (9 Weeks)**

AX 416	Clinical Practicum 5		40	5
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Descriptions of courses offered by this department begin on page 262.

# Respiratory Care

Respiratory Care is a health specialty involved in the treatment, management, diagnosis and care of patients with lung disease and cardiopulmonary dysfunction. The Respiratory Care Practitioner is an expert in the use of therapeutic gases, ventilatory support, aerosol administration, bronchopulmonary drainage and exercises, cardiopulmonary resuscitation, medications, humidification and maintenance of natural, artificial and mechanical airways. Respiratory care practitioners are also involved in diagnostic testing, monitoring, treatment, education, and research. These include the measurement of lung volumes, pressures, flows, blood gas analysis and other related physiological monitorings.

For the tactful, stable and responsible man or woman, Respiratory Care offers the chance to work closely with patients in a career which is both personally and financially rewarding.

The graduate practitioner is assured of rapid advancement in a field where there are apt to be more jobs than practitioners to fill them. While the greater number of graduates work in hospitals or hold teaching positions, the future undoubtedly will see openings in industry, rehabilitation centers and home care programs.

This program is sponsored by the College in cooperation with area hospitals and home care agencies. It is fully accredited by the Joint Review Committee of Respiratory Therapy Education which cooperates with the Committee on Allied Health Education and Accreditation (CAHEA) of the American Medical Association, and is co-sponsored by the American Association for Respiratory Care, the American College of Chest Physicians, the American Society of Anesthesiology, and the American Thoracic Society.

The curriculum includes a summer session. Students are charged for this session at the regular Division of Continuing Education rate.

## 1. Admissions Requirements

High School graduate or equivalent

PREREQUISITES: College algebra (math MM 091, MM 092, MM 093 or its equivalent), biology, and chemistry.

College placement and reading tests

Students must submit a required health form prior to September 1 in the year of their initial enrollment.

Any disabilities must be within safe limits for both students and patients. It should be noted that the affiliating hospitals require by contract proof of satisfactory health, and reserve the right to refuse affiliation for students.

Therefore, health status is subject to contract terms.

Students' physical and mental ability must withstand the vigorous demands of respiratory care (i.e., able to climb stairs rapidly and work under stress).

## 2. Academic Requirements

No grade lower than a "C" (73%) will be accepted toward graduation in respiratory therapy.

Students not meeting the grade requirement of "C" (73%) in any course will be withdrawn from the program. Failure in an affiliation course will result in dismissal from the program. Grades of less than "C" will not be accepted in transfer.

The following clinical lab courses may have a 7:00 A.M. starting time.

AR 213 Respiratory Rehabilitation

AR 307 Respiratory Care 3

AR 405 Respiratory Care 4

AR 406 Resp. Care Applied Clin. Science 2

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Respiratory Care** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
AR 104	Introduction to Respiratory Care	3		3
AR 105	Respiratory Care 1	3	2	4
BB 311	Basic Legal Concepts	1		1
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiology 1	3	2	4
MB 140	Biochemistry	3		3
		<hr/> 16	<hr/> 4	<hr/> 18

### SEMESTER 2

AR 205	Respiratory Care 2	3	2	4
AR 206	Respiratory Care 3	3		3
BD 192	Computer Concepts for Allied Health	1	2	2
LE 200	English Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiology 2	3	2	4
AA 211	Health Science 3	1		1
		<hr/> 14	<hr/> 6	<hr/> 17

### SUMMER 1 (8 Weeks)

AR 213	Respiratory Care 4	4	20	6
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### SEMESTER 3

AR 303	Intensive Respiratory Care	3		3
AR 305	Pulmonary Function Testing	3		3
AR 306	Resp. Care Applied Clin. Sci. 1	2		2
AR 307	Respiratory Care 5	3	12	6
MB 121	Microbiology	3	3	4
		<hr/> 14	<hr/> 15	<hr/> 18

### SEMESTER 4

AR 405	Respiratory Care Practicum		12	3
AR 406	Resp. Care Applied Clin. Sci. 2	2	8	4
AR 409	Neonatal and Pediatric Care	3		3
AR 408	Respiratory Care 6	3		3
NP 100	General Psychology	3		3
		<hr/> 11	<hr/> 20	<hr/> 16

Descriptions of courses offered by this department begin on page 264.



# Surgical Technology

The Surgical Technology program aims to prepare women and men to function as surgical technologists who are integral members of the surgical team who work closely with surgeons, anesthesiologists, registered nurses, and other surgical personnel in delivering patient care and assuming appropriate responsibilities before, during and after surgery. Scrub, circulating, and second assisting surgical technologists have primary responsibility for maintaining the sterile field, being constantly vigilant that all members of the team adhere to aseptic technique.

An appreciation of the person having surgery, knowledge of common conditions requiring surgery, and the surgical procedure as well as skills of patient care are included. Ethical and legal dimensions of the work and profession of surgical technology are part of the program.

The program combines core courses in biological sciences, humanities, the specialty of surgical technology, and the role of the technologist. Supervised clinical practice in hospitals, surgical processing services, and operating rooms provide experiences to prepare for entry level positions in hospital operating rooms, surgeon's offices, and free-standing surgical centers.

This program is open for new students every other year. The next class will be admitted for the Fall of 1994.

## Accreditation of Program/National Credentialing of the Graduate

This program is fully accredited by the Committee on Allied Health Education of the American Medical Association. Graduates of the program are eligible to apply for the national certifying examination in Surgical Technology (CST) given by the Association of Surgical Technologists.

## Admission and Retention Requirements

Applicants must be high school graduates or the equivalent, with courses in biology, chemistry, and algebra. Developmental courses are available at STCC to meet these prerequisites. All students must achieve a level of 093 Math on the College Placement Test.

A minimum of 2.0 QPA is required in the first year to continue in the program. Students may not take the second year AO courses until first year biological science and surgical technology (AO) courses are completed. Surgical Technology courses must be taken in sequence.

The following courses require a minimum of the grades stated:

Anatomy and Physiology .....	C-
Microbiology .....	C-
Surgical Technology (AO) all courses.....	C

## Health Requirements

A required health form must be completed prior to enrollment. In addition to the required college immunizations, prophalaxis against Hepatitis B is required. Any health limitations must be within safe limits for both students and patients.

The work in the operating room requires the ability to work on your feet, manual dexterity, a stable temperament, attention to detail, and a strong sense of responsibility and integrity.

## Special Scheduling

It should be noted that the clinical experience in the operating room is scheduled to begin at 7:00 a.m. rather than the routine College schedule. This will involve laboratories in AO 201, AO 304, AO 404, and AO 405.

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Surgical Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MB 132	Anatomy & Physiol. 1	3	2	4
AO 101	Intro. to Surgical Technology	3	3	4
AA 111	Human Sexuality	1		1
AA 112	Living & Dying	1		1
	Elective	3		3
		<hr/> 14	<hr/> 5	<hr/> 16

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MB 232	Anatomy & Physiol. 2	3	2	4
AO 201	Surgical Technology 1	3	6	5
AO 351	Biotechnology in Surgery	2		2
	Elective: Sociology/Anthropology	3		3
		<hr/> 14	<hr/> 8	<hr/> 17

### SEMESTER 3

AO 304	Surgical Technology 2	4	20	9
MB 121	Microbiology	3	3	4
AA 320	Pharmacology	3		3
		<hr/> 10	<hr/> 23	<hr/> 16

### SEMESTER 4

AO 403	Role of Surgical Technologist	2		2
AO 404	Surgical Technology 3	4		4
AO 405	Surgical Tech. 3 Practicum		24	6
BP 312	Med. Law for Health Personnel	3		3
		<hr/> 9	<hr/> 24	<hr/> 15

Descriptions of courses offered by this department begin on page 268.

# Cosmetology

The science of cosmetology has experienced the technological explosion of the twentieth century. As a result, cosmetologists entering the profession need a diversified education, i.e., an education to prepare to practice the profession, and to compete in the business environment. Numerous job opportunities exist today for the new cosmetologist. Therefore, the curriculum is offered in two sections, whereby at the end of the first two semesters, the student will receive the Certificate of Cosmetology and be eligible for the licensure examination. After passing the Massachusetts licensure exam, the student will receive an Operator license.

After two years of employment, the graduate may then apply for his/her full license as a hairdresser. The student may continue on to the third and fourth semester and qualify to receive the Associate in Science degree in Cosmetology Management. This progression may be done immediately, or be postponed until a later date. It should be noted that the graduate of the certificate program may be working as a Cosmetology Operator while s/he is in the third and fourth semester of study completing the requirements for the Associate in Science degree.

*Eligibility:* A student must be a high school graduate, sixteen (16) years of age or older, with a satisfactory medical report. The student must have high school English grades of "C" or better.

*Minimum Grade Requirement:* A student must maintain a minimum grade of "C" (73%) in each cosmetology course in order to qualify for graduation.

*Attendance Requirement:* Attendance is compulsory because of the minimum hour requirement for graduation. The College **does not** provide for make up time due to absenteeism. If a student fails to meet the attendance requirement, s/he may be dropped from the program within the first two semesters.

*Course Prerequisites:* If a student fails any of the required Cosmetology courses, he/she may re-apply for the following semester that the courses are offered. Application for licensure will not be given until the hour and course requirements are met. In this case, the Massachusetts Board of Cosmetology will be notified.

Upon successful completion of the requirements for this program, a **Certificate in Cosmetology** and application to apply for the licensure examination will be provided.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
AC 112	The Professional Cosmetologist	2		2
AC 113	Cosmetology 1	2	24	8
AC 114	Aesthetics 1	1	4	3
MB 146	Essentials of Human Biology 1	2	2	3
		<hr/> 7	<hr/> 30	<hr/> 16



**SEMESTER 2**

AC 213	Cosmetology 2	2	24	8
AC 214	Aesthetics 2	1	3	2
AC 215	Cosmetology 3	3		3
MB 246	Essentials of Human Biology 2	2	2	3
		<hr/> 8	<hr/> 29	<hr/> 16

Descriptions of courses offered by this department begin on page 191.

## Dental Assistant

The Dental Assistant curriculum encompasses the multi-disciplinary team concept. Theoretical skills are attained in conjunction with supervised off-campus clinical affiliation experiences. The curriculum conforms to the standards which are required by the Commission on Accreditation of Dental and Dental Auxiliary Educational Programs. Upon successful completion of the program, the student graduates with a Certificate in Dental Assistant and is eligible to take the Dental Assistant National Board Examination.

The program in dental assisting is fully accredited by the Commission on Dental Accreditation by the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and by the United States Department of Education.

An applicant should be a high school graduate, or possess a G.E.D. equivalency with a college preparatory background in English, biology (with a lab), mathematics, and typing. The Scholastic Aptitude Test (SAT) is optional, but preferred. A verbal score of 350 is acceptable. The Nelson-Denny Reading Examination will be administered to those individuals who are accepted into the program. Applications should be submitted to the Admissions Office. Students may choose to take their English requirements and general psychology course during the College's summer sessions either preceding or following the academic year.

The Dental Assistant program has two primary objectives: to prepare the student for employment as a professional member of the dental team, functioning as a competent dental assistant after graduation; and to prepare and motivate the student to continue his/her dental education by obtaining a degree in dental hygiene, or a baccalaureate degree. Advanced degrees will enable the qualified student to participate in broader areas of the dental profession.

Dental assisting students must purchase a kit which is comprised of essential materials and supplies. In addition, other expenses will be required as the academic year progresses.

Clinical affiliation is conducted off-campus at various dental offices throughout Western Massachusetts. The student is responsible for providing transportation to and from each clinical and educational facility. The student is expected to be in full dress uniform during this portion of the curriculum.

DENTAL ASSISTANT

The minimum grade requirement for the Dental Assistant Program is a grade of “C” (2.0) in each course. Upon the successful completion of requirements for this program, as listed below, a **Certificate in Dental Assistant** will be awarded.

SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
AD 100	Dental Asst. Techniques 1	2	3	3
AD 102	Oral Anatomy	2		2
AD 103	Dental Radiology 1	2	2	3
AD 104	Dental Materials 1	2	3	4
AD 105	Dental Sciences 1	2		2
MB 127	Func./Structure of Human Sys.	2	2	3
		<hr/> 15	<hr/> 10	<hr/> 20

SEMESTER 2

LE 203	Fundamentals of Speech	3		3
NP 100	General Psychology	3		3
AD 200	Dental Asst. Techniques 2	2	3	3
AD 201	Dental Sciences 2	3		3
AD 202	Dental Records	2		2
AD 203	Dental Radiology 2		2	1
AD 204	Clinical Affiliation		20	5
		<hr/> 13	<hr/> 25	<hr/> 20

Descriptions of courses offered by this department begin on page 195.

# Business





# Business Administration

The Business Administration department offers a variety of programs to satisfy the needs of its students, whether it be the desire to transfer to a four-year college or university to complete the Baccalaureate Degree or enter the field of business directly from STCC. The main objective of the Department is to enable the student to develop those skills and proficiencies that are essential to the component performance of professional work either in the classroom or on the job.

There is a comprehensive range of elective courses available in each of the degree programs. These electives allow the student and faculty advisor to structure a program consistent with specific interests and goals. The following illustrates the programs at STCC:

## **Associate in Science in Business Administration**

- Accounting
- Finance
- Management
- Small Business Management Option
- Marketing
- General Business
- General Business/Transfer Compact Option

The Accounting, Finance, Management, Small Business Management, Marketing and General Business degrees or options require a minimum of 21 credits of liberal arts, math and science courses and the remaining 42 credits in business and general course electives. These programs are designed to meet career objectives or transfer goals to four-year colleges. The General Business/Transfer Compact Option requires a minimum of 38 credits of liberal arts, math and sciences courses and the remaining 27 credits in business and general course electives. This program is designed to meet transfer requirements to four-year *Public* colleges, or universities that are members of the Commonwealth Transfer Pact, or those colleges that are accredited by the AACSB.

All candidates for graduation must complete a minimum of 63 credit hours except those in the Transfer Compact Option program where the minimum of 65 credit hours is required, as well as maintain a minimum grade point average of 2.0.

Transfer students are required to complete a minimum of 15 credit hours of Business Department courses at Springfield Technical Community College.

Challenge and CLEP exams covering a number of career and general courses are available at STCC.

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## **CORE CURRICULUM:**

The Department of Business Administration provides a common curriculum in the Freshman year for all Associate Degree programs, exposing students to a variety of introductory business courses before they choose a degree and a

major. Before you can be completely scheduled, the College requires that you take math and English placement tests. Depending on your results, you will be assigned to one of the following English and math courses:

*English*

- LD 090 Efficiency Reading Rates
- LD 099 Review for College Writing
- LE 100 English Composition 1

*Math*

- MM 071 Basic Math
- MM 081 Elements of Algebra 1
- MM 091 Elements of Algebra 2
- MM 122 Applied Math 1
- MM 143 Business Statistics 1
- MM 157 Calculus for Business, Life and Social Sciences 1

Of these three English courses, only LE 100, English Composition 1, is accepted toward graduation. Of the six math courses, only MM 122, Applied Math or MM 157, Calculus for Business, Life and Social Sciences 1 for transfer students, or MM 143 Business Statistics for career students, are accepted toward graduation. While you might be placed in other math or English courses, and hence be required to complete them, these courses are considered as developmental by the College, and will not count toward graduation. If you have been out of school for a number of years, or are weak in math and/or English, it would be wise to review these skills before you take the placement tests. In this way, you will give yourself the best chance of placing into an acceptable level of English and math.

**FRESHMAN YEAR**

Common Core Requirements for all Associate Degree programs.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 143	Business Statistics 1 (or)			
MM 122	Applied Math 1 (or)			
MM 157	Calculus for Business, Life and Social Sciences 1 (Note 2)	3		3
BA 110	Accounting 1	5		4
BK 110	Principles of Management	3		3
BD 101	Computer Concepts (Note 1)	3	2	4
		<hr/> 17	<hr/> 2	<hr/> 17

## BUSINESS ADMINISTRATION

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit. Math or Humanities or Social Science Elective (Note 2 and 3)	3	3
BA 210	Accounting 2	5	4
BF 110	Intro. to Finance	3	3
BI 110	Principles of Marketing (Note 4)	3	3
		<hr/> 17	<hr/> 16

#### NOTES:

- (1) BD 300 Microcomputer Applications may be substituted.
- (2) Transfer students must take MM 122 Applied Math 1 or MM 157 Calculus for Business, Life, and Social Sciences 1 in Semester 1 and MM 222 Applied Math 2 or MM 257 Calculus for Business, Life, and Social Sciences 2 in Semester 2. Career students should take MM 143 Business Statistics 1 in Semester 1 and MM 243 Business Statistics 2 or a Humanity or Social Science elective in Semester 2.
- (3) Humanities electives include art, college theater, foreign languages, music, philosophy, and literature. Social science electives include history, political science, sociology, psychology, and economics.
- (4) Students enrolled in the Small Business Management Option should take BP 112 Small Business Marketing.

### Business Administration — Associate in Science Degree

The information that follows illustrates the course sequence for the second year of study.

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### ACCOUNTING

The demand for trained accountants has increased substantially with the growth and complexity of business and government. Students of accounting, therefore, must follow a program of training which prepares them to handle the financial accounts of private and public organizations. The modern accountant must have an appreciation of all aspects of business organizations as well as technical proficiency in the following accounting matters: maintaining accurate accounting records; preparing and analyzing financial statements and cash flow reports; calculating payroll and payroll taxes; and understanding the basics of the partnership and corporate forms of business. Manpower projections have typically shown that accountants are among those who are in high demand and well paid.



**Senior Year Courses****SEMESTER 3**

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BA 311	Cost Accounting	4		3
BA 310	Intermediate Acct. 1	4		3
		<u>17</u>		<u>15</u>

**SEMESTER 4**

NE 200	Economics 2	3		3
BA 410	Intermediate Acct. 2	4		3
BB 410	Business Law 2	3		3
BF 411	Managerial Finance (or)			
BA 313	Federal Income Tax	3		3
	Elective: General	3		3
		<u>16</u>		<u>15</u>

Upon the successful completion of the requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Accounting** will be awarded.

**FINANCE**

A study of the field of finance exposes the student to the sources and uses of money. Such a curriculum includes courses in the raising of new capital, the efficient use of available funds, investing, money and banking, the Federal Reserve System and other basic studies related to the monetary system. Emphasis is given to analysis of financial statements as well as fiscal planning and management.

**Senior Year Courses****SEMESTER 3**

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BF 310	Money & Banking	3		3
BA 312	Managerial Accounting	3		3
		<u>15</u>		<u>15</u>

## BUSINESS ADMINISTRATION

### SEMESTER 4

NE 200	Economics 2	3	3
BB 410	Business Law 2	3	3
BF 411	Managerial Finance	3	3
BF 410	Investments	3	3
	Elective: General	3	3
		<hr/> 15	<hr/> 15

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Finance** will be awarded.

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### MANAGEMENT

The management program at STCC is designed to give the student a comprehensive background in the area of management. The curriculum is student-oriented primarily because its content respects the student's need for a challenging, thorough examination of the field of management, and because it provides a sound foundation for further study. In addition, specialized courses such as personnel, labor relations, finance, productions and operation research provide the student with the necessary knowledge to make positive contributions to any commercial or non-commercial organization.

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BK 310	Personnel Management	3		3
BA 312	Managerial Accounting	3		3
		<hr/> 15		<hr/> 15

#### SEMESTER 4

NE 200	Economics 2	3	3
BB 410	Business Law 2	3	3
BK 410	Labor Relations	3	3
BK 411	Production Management (or)		
BK 427	Organizational Behavior	3	3
	Elective: General	3	3
		<hr/> 15	<hr/> 15

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Management** will be awarded.

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**SMALL BUSINESS MANAGEMENT OPTION**

In the Greater Springfield area many businesses are classified as small businesses by the Federal Government. Over the last few years the Federal and State governments have begun to recognize the importance of the small business in our society and community. In order that these businesses not be eliminated, special tax incentives and loan guarantees have been proposed and some enacted. In addition, Small Business Development Centers have been created across the state to provide increased technical assistance.

The Business Department believes that the owners and professional staff of small businesses need a specially tailored curriculum that will provide the technical expertise to operate successfully.

**Senior Year Courses****SEMESTER 3**

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 412	Small Business Law & Insurance	3		3
BA 314	Small Business Planning & Control	3		3
BP 341	Small Business Personnel Management	3		3
		<u>15</u>		<u>15</u>

**SEMESTER 4**

NE 200	Economics 2	3		3
BP 342	Small Business Practicum	3		3
BP 343	Small Business Seminar	3		3
	Business Department Elective (Note 1)	3		3
	Elective: General	3		3
		<u>15</u>		<u>15</u>

NOTE: (1) Any Business Department course except those introductory business courses in the 100 or 200 series.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Management** will be awarded.

**MARKETING**

In recent years, Marketing has become an increasingly important activity within our society and, in particular, in New England where there is a growing emphasis on the providing of services. Marketing is a broad field which includes defining and creating a market for a product, gauging and meeting customer wants and needs, advertising, sales, retailing, fashion and merchandising and related areas. Essentially, the study of marketing relates to the performance of business activities that direct the flow of goods and services from producers to consumers.



## BUSINESS ADMINISTRATION

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
BI 310	Retailing	3		3
BI 410	Consumer Behavior	3		3
		<hr/> 15		<hr/> 15

#### SEMESTER 4

NE 200	Economics 2	3		3
BB 410	Business Law 2	3		3
BI 411	Sales & Sales Mgmt.	3		3
BI 311	Advertising and Promotion	3		3
	Elective: General	3		3
		<hr/> 15		<hr/> 15

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration-Marketing** will be awarded.

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### GENERAL BUSINESS

The General Business program allows students maximum flexibility in choosing Business Department electives covering the Accounting, Finance, Management and Marketing areas. The students receive a general overview and broad background in business subjects. This program may be preferred by those unable to decide on a major after completing the Freshman core business program (described previously) or by those contemplating transfer to a four-year college who want the flexibility of choosing business electives for a particular institution.

### Senior Year Courses

#### SEMESTER 3

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
BB 310	Business Law 1	3		3
	Business Dept. Elective (Note 1)	3		3
	Business Dept. Elective (Note 1)	3		3
		<hr/> 15		<hr/> 15

**SEMESTER 4**

NE 200	Economics 2	3	3
BB 410	Business Law 2	3	3
	Business Dept. Elective (Note 1)	3	3
	Business Dept. Elective (Note 1)	3	3
	Elective: General	3	3
		<hr/> 15	<hr/> 15

**NOTE:**

(1) Any Business Department course except those introductory business courses in the 100 or 200 series.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration** will be awarded.

**GENERAL BUSINESS/TRANSFER COMPACT OPTION\***

While any of the previously mentioned programs could be used for transfer, the General Business/Transfer Compact program has been designed to meet the transfer requirements of four-year Public colleges or universities that are members of the Commonwealth Transfer Compact, or those colleges that are accredited by the AACSB.

This program may be preferred by those wishing a greater mix of liberal arts, math and science courses. A total of 38 credits of such courses are required as compared to 21 to 24 credits in the other six (6) programs mentioned previously. In addition, if you desire to transfer to a *Public State College or University* that requires its incoming juniors to meet the transfer compact, then you should consider following this program.

\*Please note that this program is a specially designed transfer program and not meant to be for all transfer students. You should consult with your advisor or the college's transfer counselor to decide which of the programs would best meet your transfer needs.

**Senior Year Courses****SEMESTER 3**

No.	Course Title	Class	Lab	Credits
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
	Elective: Laboratory Science	3	2	4
	Humanities Elective (Note 1)	3		3
	Business Dept. Elective (Note 2)	3		3
		<hr/> 15	<hr/> 2	<hr/> 16

BUSINESS ADMINISTRATION

SEMESTER 4

NE 200	Economics 2	3		3
	Humanities Elective (Note 1)	3		3
	Humanities Elective (Note 1)	3		3
	Business Dept. Elective (Note 2)	3		3
	Elective: Laboratory Science	3	2	4
		<hr/> 15	<hr/> 2	<hr/> 16

NOTE:

- (1) Humanities electives must be selected from art, college theater, foreign languages, music, philosophy and literature.
- (2) Any Business Administration Department course, except those introductory business courses in the 100 or 200 series.

Please note: The appropriate mathematics, humanities, science, and business electives depend upon the college to which you are planning to transfer. All course choices should be discussed with the College's transfer counselor or your advisor.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Business Administration** will be awarded.

Descriptions of courses offered by the department begin on page 172.

# Computer Information Systems/ Data Processing

The utilization of all sizes of computers has extended into every area of business, whether large or small, and into most state and local government agencies. As a result, the need for trained personnel in various areas of computer utilization has increased sharply and is continuing.

The Computer Information Systems/Data Processing Department prepares the student for immediate career opportunities, or to transfer to a four-year college or university to complete a bachelor's degree in Computer Information Systems. Students develop professional skills and proficiencies in a variety of programming languages. Graduates typically are employed as entry-level programmers, and after a few years of experience might concentrate further in programming or go into systems analysis and design.

The department offers two areas of concentration based on a common core of courses, which allows the student to easily switch or modify tracks, depending on his or her specific interests and future goals. The basic curriculum of the department is minicomputer-oriented, and emphasizes the programming languages COBOL and RPG level III. The microcomputer specialist option is designed to meet the growing demand for technical support in microcomputers and Local Area Networks.



# COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

STCC was the first college in Western Massachusetts to offer a curriculum in data processing, and continues to stay current with the industry. The faculty are experienced, and teach a very practical, real-world approach to the field. STCC is the only college in the area which offers RPG level II and level III on the IBM AS/400.

All candidates for the Associate in Science Degree in Data Processing must complete the curriculum as shown in the catalog at the time of acceptance into the College, whether it be in the Day or Evening program. The Microcomputer Specialist option is not offered in the evening. Prior to admission into the department, a student must successfully fulfill the requirements for placement in MM 100 and LE 100. A minimum grade point average of 2.0 is required in both general and specialized areas for graduation.

In some cases work experience may be recognized for course credit, e.g., Co-Op. Also, challenge exams covering a number of career and general courses, are available at STCC.

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Data Processing** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
BA 110	Accounting 1	5		4
BD 102	RPG 2 & 3	3	2	4
BD 105	Pascal	3	2	4
BZ 100	Basic Keyboarding Skills (Note 1)	1		1
LE 100	English Comp 1	3		3
	Math Elective (Note 2)	3		3
		<hr/> 18	<hr/> 4	<hr/> 19

## SEMESTER 2

BA 210	Accounting 2	5		4
BD 202	Advanced RPG 2 & 3 (or)	3	2	4
BD 205	Advanced Pascal (Note 3)			
BD 302	COBOL 1	3	2	4
	Mathematics Elective (Note 2)	3		3
LE 200	Eng. Composition 2: Intro. to Literature	3		3
		<hr/> 17	<hr/> 4	<hr/> 18

## SEMESTER 3

BD 107	BASIC	3	2	4
BD 402	COBOL 2	3	2	4
BD 313	Operating Systems	2	2	3
BD 314	Database Systems	2	2	3
NP 100	General Psychology	3		3
		<hr/> 13	<hr/> 8	<hr/> 17

# COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

## SEMESTER 4

BD 303	C Programming	3	2	4
BK 110	Principles of Management	3		3
BD 410	Systems Analysis & Design	1	4	3
	Elective: Humanities	3		3
	Elective: Social Science	3		3
		<hr/> 13	<hr/> 6	<hr/> 16

### NOTES:

- (1) This course is not required of students who have had typing in high school.
- (2) Degree candidates are required to have 6 credits of math at level MM 101 or higher. MM 122 (Applied Math 1) and MM 222 (Applied Math 2) are recommended for transfer students.
- (3) Advanced Pascal is also recommended for transfer students.

## MICROCOMPUTER SPECIALIST (OPTION TO COMPUTER INFORMATION SYSTEMS)

Microcomputers have had a profound effect on the business community. Companies of all sizes have been quick to capitalize on the increase in productivity from employees who are skilled in the use of microcomputers. The current installed base of IBM personal computers and compatibles is estimated to be over 25 million workstations. Worldwide sales of all personal computers for 1989 totaled roughly \$60 billion, or about twice that of the mainframe market. The need for technical service and support for microcomputers and networks has spawned a new type of computer professional, the microcomputer specialist. This option is offered only in the Day Division.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
BA 110	Accounting 1	5		4
BD 107	BASIC	3	2	4
BD 300	Microcomputer Applications	3		3
BZ 100	Basic Keyboarding Skills (Note 1)	1		1
LE 100	English Composition 1	3		3
	Math Elective (Note 2)	3		3
		<hr/> 18	<hr/> 2	<hr/> 18

## SEMESTER 2

BA 210	Accounting 2	5		4
BD 314	Database Systems	2	2	3
BD 315	Advanced Spreadsheets	3		3
LE 200	English Comp. 2: Intro. to Lit.	3		3
	Math Elective (Note 2)	3		3
		<hr/> 16	<hr/> 2	<hr/> 16

**SEMESTER 3**

BD 313	Operating Systems	2	2	3
BD 320	Desktop Publishing	3		3
BZ 206	CIS Word Processing	3		3
NP 100	General Psychology	3		3
	Elective: Humanities	3		3
		<hr/> 14	<hr/> 2	<hr/> 15

**SEMESTER 4**

BD 410	Systems Analysis and Design	1	4	3
BD 412	Networks and Communications	3		3
BK 110	Principles of Management	3		3
	Elective: Business	3		3
	Elective: Social Science	3		3
		<hr/> 13	<hr/> 4	<hr/> 15

**NOTES:**

- (1) This course is not required of students who have had typing in high school.
- (2) Degree candidates are required to have 6 credits of math at level MM 101 or higher. MM 122 (Applied Math 1) and MM 222 (Applied Math 2) are recommended for transfer students.

Descriptions of courses offered by this department begin on page 185.

## Court Reporting

Court Reporting is a fascinating, challenging, financially rewarding, and highly respected profession for thousands of men and women. It can offer a great deal of independence as well as financial, personal, and professional satisfaction.

Technology has revolutionized the field of court reporting. Today's reporter must use a conflict-free theory in order to provide state-of-the-art computer-integrated reporting, i.e., real-time applications, closed captioning for the hearing impaired, video captioning, litigation support services, and compressed transcripts. Whether working in a computer-integrated courtroom or college classroom designed to offer total access to Americans with disabilities, a television station or a corporate boardroom, an institutional "think-tank" or a pre-trial deposition, today's reporter must be highly skilled in delivering high tech reporting. Today's professional reporters are unmatched in their ability to deliver a carefully edited finished product — whether it be a transcript, report, or script — in record time, with full or reduced pages, precisely synchronized to videotape, and with individual annotations, impact codes, and ASCII disks for litigation support services.

The National Court Reporters Association states that today's technologically advanced reporters are more valuable and secure than ever before.

Springfield Technical Community College has one of the most comprehensive two- or three-year court reporting programs in the country. STCC's Court



## COURT REPORTING

Reporting program instructors are certified (CRIs) by the National Court Reporters Association and follow all NCRA training guidelines. New machine shorthand classes begin every September; however, it is highly recommended that students enter the program early and complete their general education requirements prior to starting their shorthand studies.

STCC offers state-of-the-art integrated information processing (IWP), computer-aided instruction (CAI), computer-aided transcription (CAT), and computer-aided real-time (CART) training — which provides advanced students with hands-on real-time reporting experience and an extensive personal dictionary upon graduation.

Personal and professional traits of importance for court reporting are: intelligence, dedication, stamina, initiative, good judgment, poise, discretion, conscientiousness, and good human relations skills; well-developed abilities to listen and concentrate; an extensive vocabulary; and excellent spelling, punctuation, grammar, proofreading, and transcription skills.

### PREREQUISITES TO THE COURT REPORTING PROGRAM

1. 50-60 NET WPM on the five-minute Court Reporting Typing Placement Test with five errors or less.
2. Placement in college-level English on the STCC Placement Test.
3. Satisfactory score on the Court Reporting Departmental Placement Test.
4. A basic background in word processing is recommended.

The **three-year Court Reporting program** is available for students who have personal and/or professional responsibilities which would not allow a total commitment to the intensive two-year Court Reporting program. Three-year students complete a year of required academic studies prior to enrolling in Machine Shorthand courses.

### SPECIFIC INFORMATION AND GUIDELINES

1. Machine Shorthand classes meet five days a week for two to three years.
2. Machine Shorthand classes meet throughout the entire year — including winter and summer intersessions.
3. Students are required to practice a minimum of 4-6 hours a day outside of class.
4. Students are required to purchase a shorthand machine prior to the first day of classes.
5. Students must plan home, work, and academic schedules so that shorthand studies receive maximum time and energy.
6. Students must be enrolled in the full degree program at all times. Students who withdraw from academic requirements will not be entitled to continue their machine shorthand courses.
7. Students must maintain a minimum B- QPA (2.7) throughout their program.
8. Students must pass 200 WPM on Q&A dictation with a minimum of 95% and 97% accuracy before beginning internship training.

9. Incremental speed testing material will be no less than 1.4 syllabic density.

### COURT REPORTING GRADUATION REQUIREMENTS

1. **SPEEDS:** Graduates must have passed two speed tests with 95% and 97% accuracy at:  
     Literary, 180 WPM      Jury Charge, 200 WPM      Q & A, 225 WPM
2. **TYPING:** Graduates must have passed a five-minute typing test with a minimum of 60 WPM NET.
3. **INTERNSHIP:** Graduates must have completed a minimum of 50 verified hours of actual writing time (court and deposition) during internship.
4. **INTERNSHIP:** Graduates must have satisfactorily completed a minimum of 40 to 60 transcript pages from internship testimony — submitted in final edited form and appropriate style, including cover sheet, index, and certification page where applicable.
5. **PROCEDURES:** Graduates must have satisfactorily typed at least ten (10) perfect pages of transcript from simulated or actual deposition or courtroom setting in two (2) hours or less.
6. **COURSE:** Graduates must have satisfactorily completed all program and course requirements.

### SPECIAL COURT REPORTING PROGRAM EXPENSES

In addition to tuition and fees for day school and summer and winter intersessions, students should plan on the following approximated expenses over a two-year period:

Basic shorthand machine and tripod:	\$ 775	
Variable speed cassette tape player with external microphone:	125	
Books:	1,000	
Steno ribbons:	60	
Stenography steno-pad paper per carton	600	
Steno ink	20	
Blank 90-minute commercial quality cassette tapes	400	
Computer and transcript supplies	150	TOTAL: \$3,130

It is not recommended that students work while enrolled in our Court Reporting Program. Students will attend classes from approximately 8:30 a.m. until 3:00 p.m. In addition to completing their studies for various courses, they will be required to spend a minimum of four to six hours of daily practice on their steno machines. This type of schedule does not lend itself to outside employment. Those who must work should consider the three-year program.

When students qualify for practical internship, they need a professional wardrobe to wear to legal offices and courthouses. This represents a necessary expense in each student's final semester.

Transportation to classes, internship locations, and moot court sessions at the local law school, and parking costs are also expenses to be considered.

## COURT REPORTING

Some advanced students invest in computerized steno machines prior to or during internships. Graduating students must plan on this \$3,000 to \$4,000 purchase as a minimum expense to working with firms equipped with computer centers for free-lance use. Other graduating students will invest in complete real-time compatible systems representing a \$10,000 to \$20,000 investment, thereby setting themselves up as independent contractors who can do transcript preparation at home.

**NOTE:** A UNIT OF CREDIT shall be awarded for a minimum of 15 instructional hours. Many courses will require more than 15 instructional hours per unit of credit.

The Court Reporting program requires tremendous dedication and effort, and from this the graduate will reap equally tremendous satisfaction, remuneration, and prestige. **Success will be directly proportionate to individual commitment and pursuit of excellence.**

This Associate in Science program prepares men and women for careers as court reporters, conference reporters in industry and government agencies, and as shorthand machine writers in related fields where the ability to take high speed dictation is a prerequisite to employment. Following NCRA standards, students receive intensive training on the shorthand machine along with general and specialized courses. Emphasis is placed on transcription applications and an understanding of today's sophisticated technology as it relates to the reporting profession. No audit or non-degree students may enroll in this program. Many students require additional time with the program to achieve required skills. Please see previous pages for prerequisites and program/graduation requirements.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
BC 102	Machine Shorthand 1 (60)	4	6	6
LE 100	English Composition 1	3		3
NL 110	Intro. to Criminal Justice	3		3
MB 143	Fundamentals of Anatomy & Physiology 1	3		3
		<hr/> 13	<hr/> 6	<hr/> 15

### WINTER INTERSESSION 1

BC 070	Machine Shorthand Skill Building 1	9		3
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### SEMESTER 2

BC 202	Machine Shorthand 2 (80-100)	4	6	6
BC 105	Court Reporting Editing	3		3
MB 243	Fund. of Anatomy & Physiology 2	3		3
LE 200	English Composition 2	3		3
		<hr/> 13	<hr/> 6	<hr/> 15



**SUMMER INTERSESSION**

BC 304	Machine Shorthand 3 (120-140)	4	6	6
BB 310	Business Law	3		3
	Elective: Humanities/Social Science	3		3
		<hr/> 10	<hr/> 6	<hr/> 12

**SEMESTER 3**

AA 101	Medical Terminology 1	3		3
BC 310	Computer Transcription Applications	1	2	1
BC 404	Machine Shorthand 4 (160-180)	4	6	6
BL 305	Legal Shorthand Terminology	3		3
	Elective: Social Science/Humanities	3		3
		<hr/> 14	<hr/> 8	<hr/> 16

**WINTER INTERSESSION 2**

BC 090	Machine Shorthand Skill Building 2	9		3
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**SEMESTER 4**

BC 504	Machine Shorthand 5 (180-225)	4	6	6
BC 405	Medical Dictation for Court Reporters	3		3
BC 410	Court Reporting Transcription & Proc.	4		4
BC 413	Court Reporting Technology/Internship	3	6	4
		<hr/> 14	<hr/> 12	<hr/> 17

BC 070 and BC 090, Machine Shorthand Skill Building 1 & 2, are required non-graduation credit courses.

Honor courses are offered in Machine Shorthand and CAT. See course descriptions.

Upon the successful completion of requirements for this program, the degree of **Associate of Science in Court Stenography** will be awarded.

Descriptions of courses offered by this department begin on page 192.

## Office Administration

The Office Administration Department at STCC offers some of the most exciting programs on campus because its curricula reflect the rapid changes taking place in business offices. The modern office is being revolutionized by highly sophisticated electronic technology, and a "new breed" of office professional is emerging. The "Office of the Future" has already arrived, bringing with it integrated office systems and administration. The Massachusetts Division of Employment Security reports that 6,000 new office administration positions are created in Massachusetts each year, making it one of the fastest-growing job categories in the state. The severe national shortage of office personnel, the rapid technological advances in office automation and office administration, and the new opportunities for increased earning potential and career advancement make the Office Administration Department an excellent choice for dis-

## OFFICE ADMINISTRATION

tinctive business training. It is predicted that office workers will total 90% of the working population by the year 2000.

Today's office administration specialist is seen as part of the management team, and has administrative functions which include planning, organizing, and directing. Promotional possibilities include administrative specialist, office manager, records administrator, and other positions. And today's specialist commands a higher and higher salary. At a time when secretaries have become increasingly important to business, there is a critical shortage, causing an increase in salaries and benefits.

The **Office Administration Department** offers several unique programs: the one-year **Clerical Office Assistant** certificate program; the **Office Administration degree cluster** — including **Executive, Legal, and Medical** options — and the **Word Processing Management** degree program.

The Legal Office Administration program is our intensive office administration program, offering courses in Gregg shorthand, legal terminology, and legal shorthand development. Graduates from this intensive legal program are both executive and legal secretaries, and can apply for a wider variety of office administration positions. The intensive legal program is highly recommended, since the highest salaries and best promotional advancements are generally awarded to candidates with top-level skills. A marketable skill in shorthand is worth an additional \$100 to \$200 a month in salary, because in addition to possessing well-developed shorthand skills, shorthand writers are perceived as having an abundance of highly-developed skills usually not found in non-shorthand writers, such as well-developed language arts skills, transcription skills, organizational skills, and overall intellectual development.

The Executive and Medical Office Administration programs are non-shorthand programs.

All of our programs offer special career opportunities and specific academic studies. Many of these academic studies are common to all programs, and many are unique. Entering students may already have some well-developed skills in subjects like typewriting, shorthand, and records management which would make them eligible to sit for challenge examinations, designed to allow credit for acquired skills and thus enable students to enroll in a variety of advanced courses in related areas.

Office administration specialists now use computers all the time for word/information processing, telecommunications, list processing, spread sheet, data processing, and desktop publishing. We have even entered the era of computer shorthand for Gregg shorthand and non-shorthand writers.

As a result of the corporate world's technological office revolution, today's office administration specialist specializes in integrated information systems, organization, and management. Titles, salaries, benefits, roles, and responsibilities are all enhanced, and getting better and better for today's office administration specialist.

Office administration programs are very intensive, requiring approximately 30 to 40 hours of study outside class each week; and it will be worth the effort because it will bring you many rewards in job satisfaction and career advancement. STCC's Office Administration/management courses, faculty, and extensive new training facilities are state-of-the-art, and cannot be matched.

The Office Administration Department offers students the most up-to-date programs through its active memberships in the Association of Information Systems Professionals; Professional Secretaries, International (faculty CPS advises campus chapter); the American Management Society; the National Association of Female Executives; and the Massachusetts Shorthand Reporters Association.

### **Minimum English and Math Skills Requirements:**

Students must place in LE 100 prior to registering for a full first semester course schedule.

Students must place through MM 073 prior to registering for Micronumerics, Office Accounting, and/or Accounting 1. Students must place through MM 093 prior to registering for Business Statistics.

Before being scheduled into the Office Administration Department, the College requires that you take math, reading, and English placement tests. If you have been out of school for a number of years, or are weak in math and/or reading comprehension and English, it would be wise to review these skills before you take the placement tests. Depending on your results and your program, you might want to take some of the following English and math courses prior to your first semester.

### **English**

- LD 088 Basic Writing Skills
- LD 090 Reading
- LD 091-2 Reading Level 1-2
- LD 099 Review for College Writing

### **Math**

- MM 078 Basic Mathematics Lecture
- MM 087 Elements of Algebra 1
- MM 097 Elements of Algebra 2

### **Special courses for bilingual students are:**

- LD 080-3-6 English As a Second Language, level, 1, 2, 3
- LD 081-4-7 English Reading Comprehension for Bilinguals 1-3

**Minimum Grade Requirement:** Students enrolled in the Office Administration Department are required to achieve a "C" (73%) or better as a final grade in specified departmental offerings. A minimum quality point average of 2.0 is required in order to be eligible for graduation.

**Minimum Speed Requirements:** All students are required to achieve the minimum "Speed Requirements" in all departmental offerings.

**Minimum Standards:** All third and fourth semester students are required to achieve the minimum "Mailability Standards" in all departmental offerings.

**Cooperative Education:** Cooperative Education is available to eligible seniors who wish to enhance their education with work experience. Co-Op work must follow the guidelines of the Department and the Cooperative Education Office.



## OFFICE ADMINISTRATION

### EXECUTIVE OFFICE ADMINISTRATION

This non-shorthand option is available to students wishing to complete the Office Administration Executive/Legal cluster without learning Gregg Shorthand, Gregg Legal Shorthand, and legal terminology.

*Minimum English skills requirement:* Students must place in LE 100 on the English Placement Test prior to registering for their first semester courses.

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology	3		3
BD 300	Microcomputer Applications	3		3
BZ 104	Typewriting 1 (or)			
BZ 114	AVT/MLS Typewriting 1	3	3	4
		<hr/> 15	<hr/> 3	<hr/> 16

#### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
BZ 245	Micronumerics	3		3
BZ 105	Word Processing Editing	3		3
BZ 204	Typewriting 2 (or)			
BZ 214	AVT/MLS Typewriting 2	3	3	4
		<hr/> 15	<hr/> 3	<hr/> 16

#### SEMESTER 3

BZ 406	Word Processing Tech.	3	3	4
BZ 303	Office Administration Procedures	2		2
BB 310	Business Law 1	3		3
BZ 301	Advanced Keyboarding Applications	3	3	4
	Elective	3		3
		<hr/> 14	<hr/> 6	<hr/> 16

#### SEMESTER 4

LE 201	Business English	3		3
LE 203	Fundamentals of Speech	3		3
BZ 304	Machine Transcription	3		3
BP 101	Office Accounting 1	3		3
BZ 308	Admin. Support Sys. & Proced.	2		2
BZ 405	Info. Processing Office Mgmt.	3		3
		<hr/> 17		<hr/> 17

Suggested electives:

BK 110 Principles of Management  
BK 312 Women, Management, Leadership  
BZ 497 Office Cooperative Education  
Humanities/Social Science

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Office Administration-Executive** will be awarded.

### LEGAL OFFICE ADMINISTRATION

This Associate in Science degree program prepares men and women for the very specialized atmosphere and demands of the executive and legal office administration profession. The legal program emphasizes Gregg Shorthand, Gregg Legal Shorthand, and legal terminology. The severe national shortage of office personnel, the rapid technological advances in office automation and office administration, and the new opportunities for increased earning potential and career advancement make Office Administration an excellent choice for business training. Perfect for the highly-motivated individual seeking variety and challenge in a prestigious and exciting field.

*Minimum English skills requirement:* Students must place in LE 100 on the English Placement Test prior to registering for the first semester courses.

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NE 100	Economics 1	3		3
NS 100	Intro. to Sociology	3		3
BZ 104	Typewriting 1 (or)			
BZ 114	AVT/MLS Typewriting 1	3	3	4
BZ 105	Word Processing Editing	3		3
		<u>15</u>	<u>3</u>	<u>16</u>

#### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
BZ 204	Typewriting 2 (or)			
BZ 214	AVT/MLS Typewriting 2	3	3	4
BZ 102	Shorthand for the Electronic Office 1	3	2	4
BZ 245	Micronumerics	3		3
		<u>15</u>	<u>5</u>	<u>17</u>

#### SEMESTER 3

BB 310	Business Law 1	3		3
BZ 202	Shorthand for Electronic Office 2	3	2	4
BZ 301	Advanced Keyboarding Applic.	3	3	4
BZ 303	Office Admin. Procedures	2		2
BZ 406	Word Processing Tech.	3	3	4
		<u>14</u>	<u>8</u>	<u>17</u>

## OFFICE ADMINISTRATION

### SEMESTER 4

BZ 402	Shorthand for the Electronic Office 3	6	4
BZ 304	Machine Transcription	3	3
LE 201	Business English	3	3
BL 305	Legal Shorthand Terminology	3	3
BZ 308	Admin. Support Sys. & Procedures	2	2
	Elective	3	3
		20	18

Suggested electives:

BA 110	Accounting 1
BK 110	Principles of Management
BK 312	Women, Management, Leadership
BZ 405	Information Processing Office Management
BZ 497	Office Cooperative Education
BP 101	Office Accounting 1
Humanities/Social Science	

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Office Administration-Legal** will be awarded.

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### MEDICAL OFFICE ADMINISTRATION

This Associate in Science degree program prepares men and women for the highly-specialized, non-clinical medical office environment. With an extensive medical office administration background, this graduate may perform executive/legal functions in such places as hospitals, medical centers, research centers, pharmaceutical and medical publishing houses, large corporations, and other business offices requiring a skilled and knowledgeable medical professional.

Perfect for the medically-minded individual desiring non-clinical employment in the fascinating, challenging, and highly specialized field of medicine.

*Minimum English skills requirement:* Students must place in LE 100 on the English Placement Test prior to registering for their first semester courses.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
AA 101	Medical Terminology 1	3		3
BZ 104	Typewriting 1 (or)			
BZ 114	AVT/MLS Typewriting 1	3	3	4
BZ 245	Micronumerics	3		3
LE 100	English Composition 1	3		3
MB 143	Fund. of Anatomy & Phys. 1	3		3
		15	3	16



**SEMESTER 2**

BM 303	Medical Office Practice 1	2		2
BZ 204	Typewriting 2 (or)			
BZ 214	AVT/MLS Typewriting 2	3	3	4
BZ 308	Admin. Support Sys. & Procedures	2		2
LE 200	English Comp. 2: Intro. to Lit.	3		3
MB 243	Fund. of Anatomy & Phys. 2	3		3
		<hr/> 13	<hr/> 3	<hr/> 14

**SEMESTER 3**

BB 310	Business Law 1	3		3
BM 304	Medical Typewriting (or)			
BZ 301	Adv. Keyboarding Applications	3	3	4
BZ 105	Word Processing Editing	3		3
BZ 406	Word Processing Technology	3	3	4
NP 100	General Psychology	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

**SEMESTER 4**

BP 101	Office Accounting 1	3		3
BZ 304	Machine Transcription	3		3
BZ 405	Info. Processing Office Mgmt.	3		3
LE 201	Business English	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

Suggested electives:

BK 110	Principles of Management
BK 312	Women, Management, Leadership
BZ 497	Office Cooperative Education
	Humanities/Social Science

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Office Administration-Medical** will be awarded.

**WORD PROCESSING MANAGEMENT**

This Associate in Science degree program prepares men and women to assume entry-level management positions in today's information processing business environment. Specific courses in integrated information processing, office information systems, management, supervision, and communications prepare graduates to operate and supervise information processing facilities.

*Minimum English skills requirement:* Students must place in LE 100 on the English Placement Test and MM 093 on the Math Placement Test prior to registering for their first semester courses.

# OFFICE ADMINISTRATION

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
BD 300	Microcomputer Applications	3		3
BZ 104	Typewriting 1 (or)			
BZ 114	AVT/MLS Typewriting 1	3	3	4
MM 097	Mathematics	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

## SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
BZ 105	Word Processing Editing	3		3
BZ 204	Typewriting 2 (or)			
BZ 214	AVT/MLS Typewriting 2	3	3	4
MM 143	Business Statistics	3		3
	Elective	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

## SEMESTER 3

LE 203	Fundamentals of Speech	3		3
BA 110	Accounting 1	5		4
BB 310	Business Law 1	3		3
BK 110	Principles of Mgmt.	3		3
BZ 406	Word Processing Tech.	3	3	4
		<hr/> 17	<hr/> 3	<hr/> 17

## SEMESTER 4

BZ 405	Info. Proc. Office Mgmt.	3		3
LE 202	Technical Report Writing	3		3
BK 427	Organizational Behavior	3		3
NE 100	Economics 1	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

Suggested electives:

BD 314 Database Systems  
 BD 315 Advanced Spreadsheets  
 BD 320 Desktop Publishing  
 BK 312 Women, Management, Leadership  
 BZ 245 Micronumerics  
 BZ 304 Word Processing Co-Op  
 Humanities/Social Science

Upon the successful completion of requirements for this program, the degree of **Associate in Science in Word Processing Management** will be awarded.

**CLERICAL OFFICE ASSISTANT (1 YEAR)**

This certificate program is a one-year program that prepares men and women for basic office responsibilities. This is an especially good program for students with undefined career goals and/or the need to enter the job market as soon as possible. Most credits can be transferred into the Executive Office Administration program.

*Minimum English skills requirement:* Students must place in LE 100 on the English Placement Test prior to registering for their first semester courses.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
BZ 104	Typewriting 1 (or)			
BZ 114	AVT/MLS Typewriting 1	3	3	4
BZ 245	Micronumerics	3		3
BZ 303	Office Administration Procedures	2		2
LE 100	English Composition 1	3		3
LE 203	Fundamentals of Speech	3		3
		<hr/> 14	<hr/> 3	<hr/> 15

**SEMESTER 2**

BZ 103	Intro. to Word Processing	1	2	1
BZ 105	Word Processing Editing	3		3
BZ 204	Typewriting 2 (or)			
BZ 214	AVT/MLS Typewriting 2	3	3	4
BZ 308	Admin. Support Sys. & Procedures	2		2
LE 201	Business English	3		3
	Elective	3		3
		<hr/> 15	<hr/> 5	<hr/> 16

Suggested electives:

BK 110 Principles of Management  
 BK 312 Women, Management, Leadership  
 BD 300 Microcomputer Applications  
 BP 101 Office Accounting 1  
 Humanities/Social Science

Upon the successful completion of requirements of this program, a **Certificate in Clerical Office Assistant** will be awarded.

Descriptions of courses offered by this department begin on page 250.



## Liberal Arts and Sciences



# Early Childhood Education

This course of study is designed to meet the ever-expanding needs for trained personnel in the field of early learning and child care. Graduates of the two-year program will be prepared to work in non-public early learning environments such as infant/toddler centers, family day care homes, group day care centers, nursery schools, private kindergartens, health care agencies, institutions and other schools and organizations offering early learning programs and/or child care and family education services.

The curriculum is designed to meet the standards of the National Association for the Education of Young Children and the Massachusetts Office for Children categories of study, and will provide students with a comprehensive understanding of the child care profession. Formal instruction integrated with four semesters of field work in early childhood settings, under supervision, will develop teaching qualities and skills. Completion of these practica will enable the graduate who is twenty-one years of age to fulfill OFC Lead Teacher employment requirements. Admission to the Early Childhood program however, does not guarantee practicum placement.

Applicants for admission to this program must be high school graduates or equivalent. Early Childhood students must earn a 2.0 quality point average (C) for each major course offering within the program. Included in this designation are Natural History and prerequisite courses, as well as courses with an "NC" prefix. Upon the successful completion of requirements of this program, as listed below, the degree of **Associate in Science in Early Childhood Education** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NC 100	Introduction to Early Childhood Education	3		3
NC 110	Child Growth & Develop.	3		3
NC 120	Early Child. Field Work 1		3	1
NP 100	General Psychology	3		3
NS 100	Introduction to Sociology	3		3
		15	3	16

## SEMESTER 2

LE 200	Comp 2: Intro. to Lit.	3		3
NC 200	Curriculum for Early Childhood Educ. 1	3	3	4
NC 220	Early Child. Field Work 2		6	2
NS 160	Multicultural USA	3		3
MB 100	Natural History	3	2	4
NC 215	Observing & Recording Child Behavior	2		1
		14	11	17

## EARLY CHILDHOOD EDUCATION

### SEMESTER 3

NC 300	Language & Reading Instruction in Early Childhood	3	3	4
LE 203	Fundamentals of Speech	3		3
NC 325	Understanding Child Behavior Sem.	2		2
NC 335	Early Childhood Practicum 1		12	4
NH 210	Survey of Modern U.S. History	3		3
		<hr/> 11	<hr/> 15	<hr/> 16

### SEMESTER 4

NC 400	Early Childhood Practicum 2		18	6
NC 410	Health and Safety for Infants and Children	1		1
NC 425	Early Childhood Program Planning	3		3
NP 400	Principles of Normal/Abnormal Behavior	3		3
NS 250	Sociology of the Family	3		3
		<hr/> 10	<hr/> 18	<hr/> 16

Descriptions of courses offered by this department begin on page 200.

## General Studies

The General Studies Program, through a core structure cited by the National Commission on Excellence in Education, prepares students who:

- wish to earn an Associate in Arts degree and qualify for transfer to a four-year college;
- enter four-year degree programs offered jointly by STCC and UMass/Amherst, or STCC and Fitchburg State College;
- have made a career decision, but must complete prerequisites for a specific program, improve skills measured by SAT examinations, or generally confirm their commitment to a particular field;
- are undecided about career direction and seek an exploratory period leading to either a transfer program or an occupational curriculum;
- need to develop English language skills in order to work successfully in a given program.

The General Studies cores reflect these student priorities, offering curriculum and support services in program options as follows:

Core 1 — **Transfer:** for the student electing one of the degree or transfer programs;

- Commonwealth Compact option, page 29
- Industrial Arts Transfer option, page 124
- University Without Walls option, page 125, and Core 9 below;

Core 2 — **Health Careers:** for the student contemplating application to a program in the fields of Health/Human Services or Nursing, pages 63-92;



- Core 3 — **Technology:** for the student contemplating application to a program in the Division of Engineering Technologies;
- Core 4 — **Engineering:** for the student who wishes to major in the Science Transfer Option or to prepare for the Engineering Transfer program of the College;
- Core 5 — **Business:** for the student who plans application to a program in Business, Computer Information Systems, Office Administration, Cosmetology, Early Childhood Education, or Law Enforcement;
- Core 6 — **Bilingual Program:** for students who need to develop English language skills, an intensive and accelerated curriculum in English As a Second Language, as well as transitional courses in mathematics and biology, with related counseling and support services;
- Core 7 — **Open College:** proposed program for the student who needs additional academic, career, and support services while accomplishing prerequisites for college-level courses;
- Core 8 — **Non-Matriculating:** students not matriculating in a program;
- Core 9 — **University Without Walls Program:** for students accepted into the bachelor's degree program offered jointly with UMass/Amherst, page 125.

### *Placement Testing*

Both transfer and career programs require effective reading comprehension and English skills as well as a foundation in mathematics and science. Therefore, course assignments in these areas are based on the student's performance in a series of placement examinations taken after acceptance, but prior to scheduling and registration. Placement tests in mathematics, English, vocabulary development and reading comprehension are required of all entering students. It must be noted that, as prerequisites for college-level work, some courses may be required that are not acceptable to the General Studies degree.

### *Academic Advising and Counseling*

General Studies counseling staff and faculty advisors assist students in making academic decisions, pursuing program objectives, completing graduation requirements, or intra-college transfers to a career program. Students should refer questions to their assigned counselor/advisor or to the General Studies Center staff, at extension 3480.

### *GS Student Information Booklet*

Published yearly, this booklet summarizes pertinent information about department procedures, and serves as the student's personal record of courses completed toward a degree or intra-college transfer.

It is the student's responsibility to seek out information required and act upon it. The catalog and the General Studies Student Information Booklet constitute the official policy of the program in matters of graduation or transfer.

In summary, the General Studies Program involves the student in a broad range of subjects from the major academic areas; through the nine general electives allowed for the degree, its students are encouraged to explore career programs through electives in Business, Technologies, Health and Human Services. Developmental courses are available and may be required as pre-

## GENERAL STUDIES

requisites for English-speaking and non-English speaking students alike, based on test performance.

### **Minimum requirements for the degree of Associate in Arts in Liberal Arts/General Studies:**

#### *English/Communications:*

English Composition 1	3 credits
English Composition 2	3 credits

#### *Mathematics/Sciences:*

ONE college-level, transferable course in Mathematics	3 credits
ONE college-level, transferable course in the Sciences	4 credits
ONE college-level, transferable course in either Mathematics or Science	3 or 4 credits

#### *Behavioral/Social Sciences:*

Introduction to Sociology (NS 100)	3 credits
General Psychology (NP 100)	3 credits
ONE of the following: Economics 1 History or Political Science or Cultural Anthropology Elective	3 credits

#### *Humanities/Fine Arts:*

TWO courses selected from: Art College Theatre Foreign Language Music Philosophy	6 credits
ONE Literature Elective (LE 300 series)	3 credits

#### *General Electives:*

NINE college-level, non-developmental courses selected from the curriculum in Humanities, Mathematics, Natural or Social Sciences, OR from the degree requirements of another College program.

27 credits

### **TOTAL OF 60 CREDITS REQUIRED**

### **RECOMMENDED COURSE SEQUENCE**

The following sequence is recommended; however, additional semesters may be required for students whose placement scores and/or high school background indicate a need to complete prerequisites for specific college-level courses.

## GENERAL STUDIES

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Elective: General	3		3
NS 100	Intro. to Sociology (or)			
NP 100	General Psychology	3		3
	Elective: Math (See Note 1)	3		3
	Elective (Humanities): Art, Drama, Foreign Language, Music, or Philosophy	3		3
		<hr/> 15		<hr/> 15

**SEMESTER 2**

LE 200	English Comp. 2: Intro. to Lit.	3		3
	Elective: Sci. or Math	3		3
NP 100	General Psychology (or)			
NS 100	Intro. to Sociology	3		3
	Elective (Humanities): Art, Drama, Foreign Language, Music, or Philosophy	3		3
	Elective: General	3		3
		<hr/> 15		<hr/> 15

**SEMESTER 3**

	Elective: Literature	3		3
	Elective: (Hist., Econ., or Pol. Sci.)	3		3
	Elective: Science or Math	3		3
	Elective	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

**SEMESTER 4**

	Elective	3		3
	Elective	3		3
	Elective	3		3
	Elective	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

(1) MM 101-MM 103.

NOTE: All courses presented for degree must be non-developmental and college-level to total 60 semester hours.

Students in Pre-Health, Pre-Technology, Pre-Engineering, or Pre-Service courses will find recommended priorities in the General Studies Information Booklet and should consult with their counselor or faculty advisor.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Arts in Liberal Arts/General Studies** will be awarded.



## GENERAL STUDIES

### INDUSTRIAL ARTS TRANSFER OPTION

The Industrial Arts program at Fitchburg State College provides a unique blend of technical competencies and teaching skills, which in addition to general education, offers a variety of career opportunities within the public and private sectors.

Under a special articulation agreement, students enrolled in the Industrial Arts Transfer option at STCC pursue a curriculum leading to both the associate degree and transfer as juniors to Fitchburg State College for completion of the bachelor's degree sequence.

Interested students are invited to visit the General Studies Center or to call extension 3480 for further information.

Upon successful completion of requirements for this program, as listed below, the degree of **Associate in Arts in Liberal Arts/General Studies** will be awarded.

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 110	Basic Electronics 1	3		3
FD 110	Drafting & Design 1	2	6	4
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
NS 100	Intro to Sociology	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

#### SEMESTER 2

ET 210	Basic Electronics 2	3		3
LE 200	English Composition 2	3		3
MM 232	Technical Math 2	4		4
NP 100	General Psychology	3		3
	Humanities elective	3		3
		<hr/> 16		<hr/> 16

#### SEMESTER 3

GA 120	Typography	2	3	3
GC 120	Architectural Design & Spec.	2	6	4
MC 100	College Chemistry	3	3	4
NE 100	Economics 1	3		3
		<hr/> 10	<hr/> 12	<hr/> 14

#### SEMESTER 4

BD 101	Computer Concepts	3	3	4
GA 220	Layout	2	3	3
LE 203	Fundamentals of Speech	3		3
MP 119	Technical Physics	3	3	4
	Humanities elective	3		3
		<hr/> 14	<hr/> 9	<hr/> 17

## UNIVERSITY WITHOUT WALLS TRANSFER OPTION

The University Without Walls is the adult bachelor's degree program of the University of Massachusetts. Students who are accepted into the joint STCC/UWW transfer option are simultaneously enrolled in both the STCC General Studies program and the UMass University Without Walls. They have the opportunity to earn an associate's degree in General Studies while working toward a bachelor's degree from an interdisciplinary field of their choice. Students receive supportive advising from both STCC and UMass faculty. Completion of this program satisfies the University of Massachusetts general education requirements.

The STCC/UWW General Studies option introduces adult learners to the culture of higher education, focuses on the development of reading, writing and thinking skills, and offers students an opportunity to make connections between the content of a liberal arts education and life experience.

This option is ideal for adults who have life and career experience, and who are interested in a four-year degree, but have little or no college credit. UWW students work with advisors and faculty to design an individualized bachelor's degree, which usually incorporates credit for prior learning.

UWW maintains an office on the STCC campus in Garvey Hall, Room 267. For more information, call 732-5262.

## PROGRAM REQUIREMENTS

Total of 60 credits for the associate degree in General Studies

Because most students in the Core 9 option will be part-time, the required courses for the program are not listed in a semester sequence, except for the UWW introductory course, Frameworks for Understanding, which is usually taken in the first semester. It is recommended, however, that LE 100 English Composition 1 be taken as early as possible in the student's career.

### First Semester

UWW 191G	Frameworks for Understanding
----------	------------------------------

### In subsequent semesters

LE 100	English Composition 1
MM 104	Mathematics (3-credit course)
	or
MM 101, 102, 103	1-credit math tutorials
LE 200	English Composition 2: Intro. to Literature

In addition, 10 courses are required in the following areas:

### 2 courses in the social and behavioral sciences

Examples:

NP 100	General Psychology
NS 100*	Introduction to Sociology
NS 110*	Introduction to Anthropology
NL 100	American Government and Politics

## GENERAL STUDIES

NN 100	Introduction to the Social Sciences
NE 100	Principles of Economics 1
NE 200	Principles of Economics 2

### 2 courses in history

Examples:

NH 100	Survey of Early Western Civilization
NH 110	Survey of Early U.S. History
NH 200	Survey of Modern Western Civilization
NH 210	Survey of Modern U.S. History
NH 320*	Introduction to Afro-American History

### 1 course in literature

Examples:

LE 300	Literature of the Western World: BC to 17th Cent.
LE 301	British Literature: Anglo-Saxon to Neoclassical Periods
LE 302	American Literature: 1620-1860
LE 304*	Introduction to African-American Literature
LE 308	Women in Literature

### 1 course in the fine arts

Examples:

LM 130	Music Appreciation
LA 140	Art History: Prehistoric to Gothic
LA 146	Design: Introduction to Art
LA 147	Basic Drawing
LA 240	Art History: Renaissance and Baroque

### 3 courses in the sciences (1 biological science and 1 physical science required)

Examples:

MB 102	Principles of Biology 1
MB 104	Human Biology
MB 108	General Botany
MB 132	Anatomy and Physiology 1
MC 100	College Chemistry
MC 101	Survey of Chemistry 1
MP 100	Scientific Models
MP 130	College Physics 1

### 1 course in higher math or quantitative reasoning

Examples:

BD 101	Computer Concepts
MN 100	Computers and Society
MM 142	Statistics 1
MM 143	Business Statistics 1
MM 155	Calculus 1



\*Courses that deal with issues of diversity and cross-cultural understanding. One of the additional 10 Core 9 required courses must be in this category.

Upon successful completion of requirements for this program, as listed above, the degree of **Associate in Arts in Liberal Arts/General Studies** will be awarded.

### DEVELOPMENTAL COURSES AVAILABLE

For students in need of developmental studies, the following courses are sometimes required as prerequisites for college-level work; however, they cannot be applied as graduation or transfer credit.

LD 081, 084, 087	Effective Reading
LD 099	Review for College Writing
LD 080, 083, 086	English as a Second Language I, II, III
LD 082	Basic English Conversational Skills I (Bilingual)
LD 085	Basic English Conversational Skills II (Bilingual)
LD 088, 093	Basic Writing Skills for Bilinguals
MM 071-073, 078	Basic Arithmetic
MM 081-083, 087	Elementary Algebra
MM 091-093, 097	Intermediate Algebra
MP 090	Basic Science I: Introduction to Chemistry
MB 090	Basic Science II: Introduction to Biology
ND 099	Freshman Seminar

## Law Enforcement/Criminal Justice

A criminal justice program is offered primarily for students desiring to pursue a career in Law Enforcement. In addition, students desiring a pre-law school course of study will find the Law Enforcement Program most advantageous as the case method of study is employed wherever possible. There is opportunity for in-service police officers who are desirous of improving their knowledge and abilities through study of specific police science courses and various general education subjects. The objective of this two-year program is to familiarize the student with legal, technical and practical aspects of law enforcement procedures. The ever-increasing crime rate, changing social order, changes in the criminal laws and major court decisions are all factors that have made the law enforcement officer's role one of extreme importance and ever-increasing complexity in modern society. Toward this end, the student will be provided with a strong background in the basic administration of justice as well as a general knowledge of the constitutional safe-guards as afforded in the Bill of Rights. This program also includes study in the social science area and a general choice of electives. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Law Enforcement** will be awarded.

## LAW ENFORCEMENT/CRIMINAL JUSTICE

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
NL 100	Criminal Procedures 1	3		3
NL 110	Intro. to Crim. Justice	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
NS 200	Social Problems	3		3
NL 200	Criminal Procedures 2	3		3
NL 230	Criminal Evidence	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

### SEMESTER 3

NP 100	General Psychology	3		3
NI 100	Amer. Gov't & Politics*	3		3
NL 300	Criminal Law 1	3		3
NL 340	Criminal Investigation	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

### SEMESTER 4

LE 202	Technical Report Writing	3		3
NP 400	Prin. of Normal/Abnormal Behavior	3		3
NL 400	Criminal Law 2	3		3
NL 450	Law Enforcement Mgmt. and Planning	3		3
	Elective	3		3
		<hr/> 15		<hr/> 15

\*NH 110 or NH 210 may be substituted.

Descriptions of courses offered by this department begin on page 233.

## Liberal Arts Transfer

### LIBERAL ARTS TRANSFER OPTION

The Liberal Arts Transfer curriculum is designed to parallel the first two years of a four year institution's liberal arts program. It is for students who intend to transfer to a senior college and work toward a bachelor's degree. The minimum requirements for the degree are 62 semester hours (20 courses), a minimum cumulative quality point average of 2.0, including 6 credits of English Composition, 12 credits in the Humanities, 15 credits in the Social Sciences,

## LIBERAL ARTS TRANSFER

and 11 credits in Mathematics and Natural Sciences. Up to six credits may be earned through Cooperative Education. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Math: MM 101-103; MM 122; MM 124	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
NH 100	Survey of Early Western Civilization (or)			
NH 110	Early U.S. History	3		3
NP 100	General Psychology	3		3
		<hr/> 15		<hr/> 15

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
NH 200	Survey of Modern Western Civilization (or)			
NH 210	Modern U.S. History	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
	Natural Lab Science	3	3	4
NS 100	Intro. to Sociology (or)			
NS 110	Intro. to Anthropology	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

**SEMESTER 3**

	Literature Elective	3		3
	Laboratory Science	3	3	4
	Liberal Arts Elective (Spanish Recommended)*	3		3
LE 203	Fundamentals of Speech	3		3
NE 100	Economics 1	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

**SEMESTER 4**

	Literature Elective	3		3
	Liberal Arts Elective (Spanish Recommended)*	3		3
NI 100	Am. Govt. and Politics or Math or Science Elective	3		3
	Liberal Arts Elective*	3		3
	Humanities Elective**	3		3
		<hr/> 15		<hr/> 15

\*Liberal Arts Electives include: Math, Science, Social Sciences (except NP 109), Humanities, Fine Arts, and BD 196 (Computing in the Arts and Sciences).



# LIBERAL ARTS TRANSFER

\*\*Humanities Electives include: Art, Music, Drama or Philosophy.

## FINE ARTS OPTION

This Fine Arts Option is designed to parallel the first two years of a four-year college's art major. Students must complete a common core of liberal arts subjects (3 English/rhetoric; 3 math/science; 3 social science) and a fine arts core (Art History 1 and 2; Basic Drawing; Basic Design.) Seven electives must be chosen from liberal arts courses. A sample curriculum follows:

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LA 146	Intro. To Art: Basic Design	3		3
LA 147	Basic Drawing	3		3
	Math: MM 101, 102, 103, 122 or 124	3		3
LE 100	English Composition 1	3		3
NP 100	General Psychology	3		3
		<hr/> 15		<hr/> 15

### SEMESTER 2

LA 142	Painting 1 (or) other Liberal Arts Elective	3		3
LA 149	Drawing Composition (or)			
	other Liberal Arts Elective	3		3
LE 200	Comp. 2: Intro. to Literature	3		3
	Lab Science	3	2	4
LA 143	Printmaking 1 (or)			
	other Liberal Arts Elective	3		3
		<hr/> 15	<hr/> 2	<hr/> 16

### SEMESTER 3

LA 140	Art History: Prehistoric to Gothic	3		3
NS 100	Intro. to Sociology	3		3
LA 242	Painting 2 or other Liberal Arts Elective	3		3
	Lab Science	3	2	4
	Elective: Literature or Art	3		3
		<hr/> 15	<hr/> 2	<hr/> 16

### SEMESTER 4

LA 145	Figure Drawing (or)			
	other Liberal Arts Elective	3		3
LA 240	Art History: Ren. & Baroque	3		3
LA 243	Printmaking 2 (or)			
	other Liberal Arts Elective	3		3
	Elective: Liberal Arts	3		3
	Elective: History	3		3
		<hr/> 15		<hr/> 15

Upon the successful completion of the requirements for this program, the degree of **Associate in Arts in Liberal Arts Transfer** will be awarded.

# Engineering Technologies



# Automotive Technology

The automotive service technician of today is required to have a strong background in electronics, mathematics, and science in order to understand the new computerized control and fuel delivery systems, and to keep pace with the ever-changing technology in the automotive industry.

The STCC Automotive Technology program is affiliated with Ford Motor Company's ASSET (Automotive Student Service Educational Training) program. In this two-year program, students will receive instruction in 9-week cycles in the classroom and laboratory, alternating with 9 weeks of paid cooperative education experiences at participating Ford-Lincoln/Mercury dealerships. Students must be accepted into this program by both STCC and a sponsoring dealership. Students will be required to acquire a basic set of tools.

A knowledge of scientific principles and technical information is emphasized so that students can understand why mechanical, electronic, and other technical malfunctions occur. Major areas of instruction include engines, transmissions, differentials, brakes and suspensions, electronic fuel systems, computerized engine controls, electrical systems, and automotive microcomputer systems. Emphasis on diagnosing and servicing these systems will be stressed.

This program is open for new students every other year. The next class will be admitted for the Fall of 1995. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Automotive Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
IA 110	Gasoline Engine Systems	2	3	3
IA 330	Brakes and Suspension	2	3	3
IA 130	Intro. to Automotive Service	1	2	2
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
	Elective: General	3		3
		<hr/> 11	<hr/> 8	<hr/> 14

## SEMESTER 2

LE 100	English Composition 1	3		3
IA 210	Gasoline Engines Service	2	3	3
ET 240	Automotive Electronics 1	3	3	4
IA 310	Fuel and Electric Systems	2	3	3
IA 335	Automotive Schematic Reading		3	1
		<hr/> 10	<hr/> 12	<hr/> 14

## SUMMER SESSION

IA 120	Driveline and Air Conditioning	2	3	3
BK 112	Managerial Supervision	3		3
		<hr/> 5	<hr/> 3	<hr/> 6



## SEMESTER 3

BD 195	Computer Concepts/Technical	2	2	3
ET 345	Automotive Electronics 2	2	3	3
IA 220	Automatic Transmissions	2	3	3
IA 420	Engine Diagnosis and Tune-Up	2	3	3
NP 109	Human Relations	3		3
MP 119	Technical Physics	3	3	4
		<hr/> 14	<hr/> 14	<hr/> 19

## SEMESTER 4

IA 430	Advanced Automotive Systems	2	3	3
LE 202	Technical Report Writing	3		3
NE 100	Economics 1	3		3
IA 432	Applied Automotive Electronics	2	3	3
	Elective: General	3		3
		<hr/> 13	<hr/> 6	<hr/> 15

Descriptions of courses offered by this department begin on page 165.

# Bio-Medical Instrumentation Technology

Instrumentation is being used increasingly in medical, biological and research fields. This equipment has become so complex that technicians must have a detailed knowledge of biomedical procedures and biomedical terminology so that proper functioning of the equipment and safety of the patient can be assured. The program provides the general technical knowledge and understanding of the more commonly used bio-medical instruments, components, systems and circuit techniques. Minimum Grade Requirement: Bio-Medical Technology students shall maintain a minimum grade of "C" (2.0) for all departmental courses. A grade of "C" or lower will be considered a poor level of performance in any course. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Bio-Medical Instrumentation Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Elective: Social Science	3		3
EB 120	Measuring Principles 1	2	3	3
ET 110	Basic Electronics 1	3		3
ET 115	Electronics Lab 1		4	2
MM 101	Mathematics	1		1
MM 102	Mathematics	1		1
MM 103	Mathematics	1		1
		<hr/> 14	<hr/> 7	<hr/> 17

## BIO-MEDICAL INSTRUMENTATION TECHNOLOGY

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
EB 230	Measuring Principles 2	2	3	3
ET 210	Basic Electronics 2	3		3
ET 220	Active Networks 1	3		3
ET 215	Electronics Lab 2		4	2
MC 100	College Chemistry	3	3	4
		<hr/> 14	<hr/> 10	<hr/> 18

### SEMESTER 3

EB 310	Bio-Med Systems 1	3		3
EB 340	Digital Electronics Lab		4	2
EB 330	Semiconductors Lab		4	2
EB 350	Digital Electronics	3		3
LE 202	Technical Report Writing (or)			
NE 100	Economics (or)			
	Elective: Social Science	3		3
	Elective: Humanities	3		3
		<hr/> 12	<hr/> 8	<hr/> 16

### SEMESTER 4

EB 410	Bio-Med. Systems 2	2	2	3
EB 420	Instrumentation Project		4	2
EB 430	Codes-Laws-Safety	1		1
ED 420	Microprocessor Theory	3		3
MB 136	Applied Physiology	3	3	4
EB 440	Integrated Circuits	3		3
IT 420	Schematic Reading	1		1
		<hr/> 13	<hr/> 9	<hr/> 17

Descriptions of courses offered by this department begin on page 166.

## Civil Engineering Technology

The Civil Engineering Technology program provides a broad engineering background for persons wanting to work in industries that require knowledge in design, surveying, drafting, CAD, and estimating. Aspects of construction techniques, soils engineering, field and materials testing, and construction/project management are included in the curriculum. Design of residential and light commercial structures are stressed. Elements of roadway design and layout are also covered. Graduates work for designers, engineers, large and small contractors, testing companies, and environmental service and cleanup companies. Some graduates work for public utilities, towns, and state agencies. Graduates enjoy an excellent placement record with challenging career growth opportunities.

*Minimum grade requirements:* Department courses shall be completed with a grade of "D" (63%) or better. A QPA of 2.0 must be achieved for graduation. To

continue in the program, the math requirements listed below must be satisfied. Also, at the beginning of the third and fourth semesters, the student must have a QPA of 1.7 and 1.9 respectively. Failure to meet the academic standards will result in academic probation.

Upon successful completion of the program requirements listed below, the degree of **Associate in Science in Civil Engineering Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 132	Technical Mathematics 1 (note 1)	4		4
BD 195	Computer Concepts for Technologies	2	2	3
GC 105	Civil Engineering Seminar	1		1
GC 115	Construction Materials and Methods (note 4)	3		3
GC 120	Architectural Design and Specifications 1	2	6	4
		<u>15</u>	<u>8</u>	<u>18</u>

## SEMESTER 2

LE 202	Technical Report Writing	3		3
MM 232	Technical Mathematics 2 (note 2)	4		4
MP 119	Technical Physics	3	3	4
GC 220	Construction Estimating	2	3	3
GC 235	Hydraulics and Hydrology	2	3	3
		<u>14</u>	<u>9</u>	<u>17</u>

## SEMESTER 3

MC 100	College Chemistry (note 5)	3	3	4
FB 230	Introduction to CAD	2	4	3
GC 310	Surveying 1	2	6	4
GC 320	Soils and Foundations	3		3
GC 345	Statics and Strength of Materials	3	3	4
		<u>13</u>	<u>16</u>	<u>18</u>

## SEMESTER 4

NE 100	Economics 1	3		3
GC 410	Reinforced Concrete Analysis (note 3)	2	3	3
GC 420	Construction Management	3		3
GC 430	Transportation Engineering	2	3	3
GC 445	Structures (note 3)	3	3	4
GC 455	Civil Engineering Materials Testing	2	3	3
		<u>15</u>	<u>12</u>	<u>19</u>

## NOTES:

- (1) Math MM 132 must be completed before any third or fourth semester Civil Engineering Technology courses can be taken.
- (2) Math MM 232 must be completed before any fourth semester Civil Engineering Technology courses can be taken.



- (3) GC 345 (Statics and Strength of Materials) is a prerequisite
- (4) Must be at MM 091 (MM 097) and LD 099 level or higher
- (5) Potential transfer students intending to pursue BSCE degree should take MC 103 General Chemistry 1

Descriptions of courses offered by this department begin on page 182.

## Computer Systems Engineering Technology

The Computer Systems Engineering Technology program is designed to provide the student with the necessary electronics background and the computer "know-how" to deal with the ever-changing computer technology. This program will equip the student with well beyond the entry-level skills required to enter the computer industry. Typical positions for graduates range from computer maintenance service technicians to engineering research technicians.

The program gives the student a theoretical background in basic electronics, digital circuitry, and programming. "Hands-on" laboratory work with computer equipment allows the students to apply what they have learned in class. The department's resources include 48 Aim-65 eight-bit computers, 17 Motorola 68000 sixteen-bit computers, a DEC PDP-11, two Data General Nova mini-computers, and circuit labs that have been outfitted with modern test equipment. The College also has a large number of IBM PC's and an academic computer for student use.

**Minimum Grade Requirements:** Students in Computer Systems Engineering Technology must receive a grade of "D" or better. A QPA of 2.0 must be achieved for graduation. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Computer Systems Engineering Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 111	Intro. to Computer-Aided Engineering Technology	2	3	3
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

**SEMESTER 2**

ED 241	Computer Programming	1	3	2
ET 230	Circuit Theory 2	3	3	4
ET 235	Digital Systems	3	3	4
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
		<hr/> 14	<hr/> 9	<hr/> 17

**SEMESTER 3**

ED 333	Machine & Assembly Language Prog.	2	3	3
ED 340	Operating Systems	3		3
ED 342	Embedded Controllers 1	3	3	4
ED 343	Linear Circuits	3	3	4
LE 203	Fundamentals of Speech	3		3
		<hr/> 14	<hr/> 9	<hr/> 17

**SEMESTER 4**

ED 440	Microprocessor Interfacing	3	3	4
ED 442	Embedded Controllers 2	3	3	4
ED 444	Computer Networking	3		3
ED 451	Computer Peripherals	3		3
MP 119	Technical Physics	3	3	4
		<hr/> 15	<hr/> 9	<hr/> 18

NOTE: MM 132 and MM 232 must be completed and passed by the start of the third semester.

Descriptions of courses offered by this department begin on page 188.

## Electrical/Robotics Technology

The Electrical/Robotics Technology program prepares students for work in the development, installation and maintenance of robotic and industrial automated systems.

The field of robotics and automation is concerned with automated machines controlled electrically by involving the coordinated use of hydraulics, electrical, pneumatic, and microcomputer elements. An investment in robotics presents many advantages to enterprises, including lower production costs and a quality of work not attainable by a human operator. With this in mind, the need for skilled technicians to install, maintain, and service these automated systems will be ever-increasing.

*Minimum grade requirements:* All "EE" series electrical technology courses must be successfully completed with a grade of "D" or better to graduate. These courses must be taken in sequential order. That is, second semester courses cannot be taken until the first semester prerequisite courses are successfully completed. Before starting the third semester, the student must have successfully completed MM 232, Technical Mathematics 2. Upon the success-

## ELECTRICAL/ROBOTICS TECHNOLOGY

ful completion of requirements for this program, as listed below, the degree of **Associate in Science in Electrical Technology** will be awarded.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
EE 110	Basic Electricity 1	2	3	3
EE 121	CAD for Automation	3		3
EE 140	Programming for Microcomputers	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 18	<hr/> 3	<hr/> 19

### SEMESTER 2

EE 210	Basic Electricity 2	2	3	3
MM 232	Technical Math 2	4		4
EE 241	Fundamentals of Motor Control	2	3	3
EE 340	Fundamentals of Robotics	2	3	3
IT 320	Hydraulics and Pneumatics	3		3
		<hr/> 13	<hr/> 9	<hr/> 16

### SEMESTER 3

EE 320	Ind. Electronics 1	2	3	3
EE 350	Programmable Motor Control	2	3	3
LE 202	Technical Report Writing	3		3
EE 331	Control System Theory 1	4		4
EE 480	Robotics and Automated Systems	2	3	3
		<hr/> 13	<hr/> 9	<hr/> 16

### SEMESTER 4

EE 440	Solid State Circuit Design	2	2	2
EE 411	Industrial Electronics 2	2	3	3
EE 451	Microprocessor Applications	2	3	3
LE 203	Fundamentals of Speech	3		3
EE 431	Control Systems Theory 2	2	3	3
	Elective: Humanities/Soc. Sci.	3		3
		<hr/> 14	<hr/> 11	<hr/> 17

Descriptions of courses offered by this department begin on page 202.

## Electronic Systems Engineering Technology

The Electronic Systems Engineering Technology program is organized to present learning activities that will qualify the graduate to perform job functions in areas such as communications, control systems, computers, circuit design and



# ELECTRONIC SYSTEMS ENGINEERING TECHNOLOGY

systems testing. Training for a wide range of jobs is provided by a two-year technical program of specialized, intensive instruction designed to fit individuals for useful employment as highly skilled technicians in the electronics field.

**Minimum Grade Requirement:** Students in Electronic Systems Engineering Technology must receive a grade of "D" or better. A QPA of 2.0 must be achieved for graduation. Upon the successful completion of the requirements for this program, as listed below, the degree of **Associate in Science in Electronic Systems Engineering Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 111	Intro. to Computer-Aided Engineering Technology	2	3	3
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

## SEMESTER 2

ET 225	Computer Applications	1	3	2
ET 230	Circuit Theory 2	3	3	4
ET 235	Digital Systems	3	3	4
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
		<hr/> 14	<hr/> 9	<hr/> 17

## SEMESTER 3

ET 330	Fundamentals of Pulse & Digital Circuits	3		3
ET 342	Computer Systems	3		3
ET 343	Linear Circuits	3	3	4
ET 344	Communications Systems 1	3	3	4
MP 120	Technical Physics for Electronics	3	3	4
		<hr/> 15	<hr/> 9	<hr/> 18

## SEMESTER 4

ET 442	Linear Systems	3	3	4
ET 443	Microprocessor Architecture	3	3	4
ET 444	Communications Systems 2	3	3	4
LE 203	Fundamentals of Speech	3		3
		<hr/> 12	<hr/> 9	<hr/> 15

MM 132 and MM 232 must be completed and passed by the start of Semester 3.

Descriptions of courses offered by this department begin on page 205.

# Energy Systems Technology

The Energy Systems Program is unique in the sense that it is the only such program offered on the East Coast. An up-to-date, extensive laboratory facility has been created which utilizes the latest in equipment and control devices. Seniors who complete all course requirements are awarded the Associate in Science degree. They are given the opportunity to earn additional awards by taking the "Certificate of Competency" and "Stationary Fireman's" examinations as directed by the Massachusetts Department of Public Safety. The Energy Systems graduate is well prepared to enter an industry that offers career positions as manufacturers' representatives, service engineers, sales engineers, estimators, independent businessmen, lab technicians, and power plant operators.

**Minimum Grade Requirement:** Students must achieve a "D" as the minimum passing grade in all HP series technical courses. A student must have earned a minimum QPA of 2.0 for graduation. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Energy Systems Technology** will be awarded.

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
NP 109	Human Relations	3		3
HP 132	Engr. Graphic 331	1	3	2
HP 110	Theory of Controls	3		3
HP 120	Energy Systems Lab 1	1	3	2
		<hr/> 15	<hr/> 6	<hr/> 17

## SEMESTER 2

LE 203	Fundamentals of Speech	3		3
HP 220	Combustion Control Cir.	3		3
HP 230	Energy Systems Lab 2	1	3	2
BD 195	Computer Concepts/Technical	2	2	3
	Elective: Social Science	3		3
		<hr/> 12	<hr/> 5	<hr/> 14

## SEMESTER 3

MC 100	College Chemistry	3	3	4
HP 240	Principles of Refrigeration	2	3	3
HP 330	Power Plant Operation 1	3		3
HP 350	Microprocessor Controls	2	3	3
HP 320	Heating System Design	3		3
		<hr/> 13	<hr/> 9	<hr/> 16

## SEMESTER 4

LE 202	Tech. Report Writing	3		3
HP 340	Fund. of Air Conditioning	2	2	3
HP 430	Power Plant Operations 2	3		3
HP 425	Building Management Systems	3	3	4
HP 411	Advanced Heating System Design	4		4
		<hr/> 15	<hr/> 5	<hr/> 17

Descriptions of courses offered by this department begin on page 208.

## Environmental Technology

The Department of Environmental Technology offers courses to prepare students for work in water pollution control, water treatment, air pollution monitoring, occupational safety, hazardous waste, and industrial hygiene. The program is oriented toward environmental control, with the objective of training technicians who can operate water treatment and wastewater treatment facilities; monitor air and water quality; implement health, safety, and hazardous waste regulations; and clean up contaminated groundwater. The graduates will find work in municipal and industrial water pollution control or drinking water facilities, hazardous waste control firms, groundwater hydrology firms, environmental laboratories, environmental regulatory agencies, consulting firms, and health and safety departments in general industry.

The program is career-oriented, and transfer to four-year colleges is possible, although not all credits transfer to every college. It is desirable to have one year of chemistry and one year of algebra prior to entering the program. Those students without this background can expect to take more than two years to complete the program. The students will be trained in both theory and its application, and will receive hands-on laboratory and field experience on pollution control equipment.

*Minimum Grade Requirement:* The minimum passing grade for any individual course in the Environmental Technology Department shall be a "D" (60). The minimum average for graduation from the department is a "C". Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Environmental Technology** will be awarded.

This department also offers a certificate of completion program in Occupational Health and Safety for Registered Nurses.



# ENVIRONMENTAL TECHNOLOGY

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
HE 210	Municipal Wastewater Plant Operations 1	3		3
LE 100	English Composition 1	3		3
MB 102	Principles of Biology 1	3	2	4
MC 101	Survey of Chemistry 1	3	3	4
MM 132	Technical Math (note 1)	4		4
		<hr/> 16	<hr/> 5	<hr/> 18

## SEMESTER 2

BD 195	Computer Concepts/Technical	2	2	3
HE 330	Municipal Wastewater Plant Operations 2	2	3	3
LE 202	Technical Report Writing	3		3
HE 325	Occupational Safety	3		3
MC 201	Survey of Chemistry 2	3	3	4
		<hr/> 13	<hr/> 8	<hr/> 16

## SUMMER (5 Weeks)

HE 230	Environmental Practicum			3
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## SEMESTER 3

HE 315	Facilities Maint. & Instrumentation	3		3
HE 440	Hazardous Materials and Waste Management 1	3		3
MB 122	Environmental Microbiology	3	3	4
HE 331	Fundamentals of Industrial Hygiene	3	3	4
HE 340	Toxicology	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

## SEMESTER 4

HE 410	Water and Ind. Wastewater Treatment	2	3	3
HE 435	Safety Risk Management	3		3
HE 441	Hazardous Materials and Waste Management 2	2	3	3
MC 340	Instrumental Analysis	2	3	3
	Elective: Social Science	3		3
		<hr/> 12	<hr/> 9	<hr/> 15

## NOTE:

(1) Auto-tutorial math MM 101, MM 102, MM 103 may be taken in place of MM 132.

Descriptions of courses offered by this department begin on page 218.

# Graphic Arts Technology

The Graphic Arts Department offers a curriculum designed to prepare students for the many and varied careers available in the commercial printing and advertising business. The courses are devoted to functional discussions crossing most branches of the printing industry. It is the objective of the department to relate the many branches of the industry to each other and to the totality of contemporary printing. Rochester Institute of Technology, as well as other institutions offering Graphic Arts specialty courses, have indicated that they will accept credits from this program toward an advanced degree in Printing and Publishing.

The program offers two options wherein the student may concentrate in two major areas within the printing industry. Options in Commercial Art or Printing Technology allow the student to specialize in that area where his or her talents are most satisfied. A certificate program is also offered in both options.

*Minimum Grade Requirement:* The minimum passing grade for any individual course in this program shall be a "D" (60%). The minimum average for graduation from the program is a "C" (73%).

Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Graphic Arts Technology** will be awarded.

## CORE CURRICULUM FOR BOTH OPTIONS

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
GA 120	Typography	2	3	3
GA 131	Printing Technology	3		3
BZ 100	Basic Keyboarding	1		1
GA 135	Intro. to Graphic Arts Computer	2	3	3
	Elective: Social Science	3		3
		<hr/> 14	<hr/> 6	<hr/> 16

### SEMESTER 2

GA 220	Layout	2	3	3
GA 240	Desktop Publishing Typography	2	3	3
MM 120	Contemporary Math*	3		3
LE 202	Technical Report Writing (or)			
LE 200	English Composition 2	3		3
GA 210	Basic Image Assembly	2	3	3
BD 300	Microcomputer Applications	3		3
		<hr/> 15	<hr/> 9	<hr/> 18

\*Higher level math acceptable (recommended for transfer)

## GRAPHIC ARTS TECHNOLOGY

### COMMERCIAL ART

#### (OPTION TO GRAPHIC ARTS TECHNOLOGY)

This option prepares the student for copy preparation departments of commercial printing or entry level into advertising agencies and commercial art studios. Developed proficiency in typography, typesetting, layout, design, and mechanical preparation provide the basic skills required for this exciting and demanding career.

#### SEMESTER 3

GA 350	Graphic Design	2	3	3
GA 360	Offset Presswork 1	2	3	3
GA 320	Advanced Image Assembly	2	3	3
GA 371	Printshop Management	3		3
MP 255	Photographic Science	2	3	3
		11	12	15

#### SEMESTER 4

BI 312	Advertising Principles	3		3
GA 421	Reproduction Photography	2	3	3
GA 445	Computerized Graphic Design	2	3	3
GA 461	Advanced Desktop Publishing	2	3	3
LA 146	Basic Design/Intro. to Art	3		3
		12	9	15

GA 398 and GA 497, Cooperative Education: Recommended as additional courses, but not certified as substitution for any of the above.

### PRINTING TECHNOLOGY

#### (OPTION TO GRAPHIC ARTS TECHNOLOGY)

This option to Graphic Arts Technology combines the graphic arts technical aspects with basic managerial skills, providing the student with the expertise for entry-level placement in middle management positions in the commercial or in-plant printing industry. Also included is a concentrated study in the technical aspects of the printing industry, which prepares students for entry into the commercial printing field as a technician in one of the many areas requiring a high degree of proficiency in copy preparation, color stripping procedures, and copy reproduction.

#### SEMESTER 3

BP 101	Office Accounting	3		3
GA 371	Printshop Management	3		3
	Elective: Humanities	3		3
MC 100	College Chemistry	3	3	4
MP 255	Photographic Science	2	3	3
		14	6	16



**SEMESTER 4**

GA 410	Chemistry of Lithography 2	3	3	4
GA 421	Reproduction Photography	2	3	3
GA 360	Offset Presswork	2	3	3
GA 420	Color Reproduction Processes	3		3
GA 461	Advanced Desktop Publishing	2	3	3
		<hr/> 12	<hr/> 12	<hr/> 16

GA 398 and GA 497, Cooperative Education: Recommended as additional courses but not certified as a substitution for any of the above.

GA 397 and GA 497, GA Co-op will be allowed as a professional elective if an appropriate work experience of a minimum 12 hours per week is available to the student and is approved by the GA Co-op advisor.

Descriptions of courses offered by this department begin on page 222.

## Landscape/Plant Science Technology

Students enrolled in this program will receive a broad base in the development and maintenance of land areas. Topics ranging from plant identification and use, and tree and landscape maintenance, to landscape design and construction, are included as part of the curriculum. The importance of qualified field personnel is stressed throughout the program. Students will be given an appreciation and understanding of the effects than can be created by well-planned landscape design and maintenance. Graduates may be employed by nurseries, landscape contractors, private and public parks, and by business firms as grounds maintenance specialists. With the rapid development of more complex and varied materials and equipment for use in this field, there is an increasing need for properly trained personnel to fill responsible positions both in field work and in planning and management.

*Minimum Grade Requirement:* All Landscape Technology courses shall be completed with a grade of "D" (63% or 1.0) or above. Any course failed must be repeated before graduation and each course may be repeated only once. The student must also have achieved a 2.0 QPA and shall have remained in good academic standing as outlined below:

- A) At the beginning of the second semester, the student must maintain a 1.5 QPA
- B) At the beginning of the third semester, the student must maintain a 1.7 QPA
- C) At the beginning of the fourth semester, the student must maintain a 1.9 QPA

A student not meeting the above academic standards will be placed on academic probation for one semester. If, at the end of this period, no improvement has taken place, the student will be removed from the program. Upon the successful completion of requirements for this program, as listed below, the degree of **Associate in Science in Landscape Technology** will be awarded.

## LANDSCAPE/PLANT SCIENCE TECHNOLOGY

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
BD 195	Computer Concepts for Technologies	2	2	3
LE 100	English Composition 1	3		3
MM 120	Contemporary Math 1	3		3
GL 111	Trees in Landscape	3	3	4
GL 120	Prin. of Horticulture	2	3	3
		<hr/> 13	<hr/> 8	<hr/> 16

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
GL 210	Presentation Techniques		6	3
MB 108	General Botany	3	3	4
GL 220	Turf Management	2	3	3
	Elective: Social Science	3		3
		<hr/> 11	<hr/> 12	<hr/> 16

### SEMESTER 3

GL 311	Shrubs in the Landscape	3	3	4
GL 320	Landscape Practices	2	3	3
GL 330	Landscape Design 1	1	4	3
GL 350	Landscape Oper. (Plant)	2	3	3
LE 203	Fundamentals of Speech	3		3
	Elective: Social Science*	3		3
		<hr/> 14	<hr/> 13	<hr/> 19

### SEMESTER 4

GL 410	Plant Propagation	2	3	3
GL 420	Landscape Design 2	1	4	3
GL 431	Earth Forms & Structures	3	3	4
BK 421	Small Business Formation	3		3
GL 450	Entomology/Disease Control	2	3	3
		<hr/> 11	<hr/> 13	<hr/> 16

\*NP 109 recommended

Descriptions of courses offered by this department begin on page 229.

## Laser Electro-Optics Technology

Laser Electro-Optics Technology is one of the more rapidly growing technical fields in America today. The trained technician can expect favorable job opportunities, promotion potential and rapid advancement. STCC's program is designed to expose the student to four major areas: Laser Systems, Electronics, Optics and Electro-Optics. The student will learn about the laser both as an instrument and as an integral part of a system designed for industrial, medical and scientific application. The electronics used in generating and controlling the laser will be taught. The use of the laser in electronics production, testing, main-

# LASER ELECTRO-OPTICS TECHNOLOGY

tenance, research and development, is part of the curriculum. In the field of optics, the student will acquire a good working knowledge of light, geometrical and physical optics, optical components and optical systems. Finally, the student will devote a large portion of his time to incorporating optical and laser skills and knowledge into developing Electro-Optical Techniques and Systems.

*Minimum Grade Requirement:* Students must receive a grade of "D" or better. A QPA of 2.0 must be achieved for graduation.

Upon the successful completion of requirements for this program, as listed below, the **Associate in Science Degree in Laser Electro-Optics Technology** will be awarded.

## CORE CURRICULUM FOR ALL OPTIONS

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
ET 111	Intro. to Computer-Aided Engin. Tech.	2	3	3
ET 130	Circuit Theory 1	3	3	4
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
	Elective: Social Science	3		3
		<hr/> 15	<hr/> 6	<hr/> 17

### SEMESTER 2

EL 090	Laser Safety	1		1
EL 330	Geometrical Optics	3	3	4
ET 225	Computer Applications	1	3	2
ET 230	Circuit Theory 2	3	3	4
ET 235	Digital Systems	3	3	4
MM 232	Technical Math 2	4		4
		<hr/> 15	<hr/> 12	<hr/> 19

### LASER APPLICATIONS

#### (OPTION TO LASER ELECTRO-OPTICS TECHNOLOGY)

### SEMESTER 3

EL 320	Introduction to Lasers	3	3	4
EL 325	Laser Electronics	3	3	4
EL 335	Data Acquisition & Control	3		3
EL 420	Wave Optics	3	3	4
MP 120	Technical Physics for Electronics (or)			
MC 103	General Chemistry 1	3	3	4
		<hr/> 15	<hr/> 12	<hr/> 19



# LASER ELECTRO-OPTICS TECHNOLOGY

## SEMESTER 4

EL 412	Laser Electro-Optics Projects	2	3	3
EL 415	Laser Systems	3	3	4
EL 425	Industrial Laser Applications	3	3	4
LE 202	Technical Report Writing	3		3
		<hr/> 11	<hr/> 9	<hr/> 14

## PHOTONICS

### (OPTION TO LASER ELECTRO-OPTICS TECHNOLOGY)

Planned Implementation Fall, 1994

## SEMESTER 3

EL 320	Introduction to Lasers	3	3	4
EL 345	Photonics	3	3	4
EL 348	Optical Communications	3		3
EL 420	Wave Optics	3	3	4
MP 120	Technical Physics for Elect. (or)			
MC 103	General Chemistry 1	3	3	4
		<hr/> 15	<hr/> 12	<hr/> 19

## SEMESTER 4

EL 412	Laser Electro-Optics Projects	2	3	3
EL 435	Fiber/Integrated Optics	3	3	4
EL 438	Optoelectronics	3	3	4
LE 202	Technical Report Writing	3		3
		<hr/> 11	<hr/> 9	<hr/> 14

## OPTICAL FABRICATION AND TESTING

### (OPTION TO LASER ELECTRO-OPTICS TECHNOLOGY)

Planned implementation Fall, 1994

## SEMESTER 3

EL 320	Introduction to Lasers	3	3	4
EL 350	Optical System Design	3		3
EL 352	Optical Test and Measurement	3	3	4
EL 420	Wave Optics	3	3	4
MP 120	Technical Physics for Elec. (or)			
MC 103	General Chemistry 1	3	3	4
		<hr/> 15	<hr/> 12	<hr/> 19

## SEMESTER 4

EL 412	Laser Electro-Optics Projects	2	3	3
EL 440	Vacuum Thin Film Deposition	3	3	4
EL 442	Optical Component Fabric & Assem.	3	3	4
LE 202	Technical Report Writing	3		3
		<hr/> 11	<hr/> 9	<hr/> 14

Descriptions of courses offered by this department begin on page 231.

# Mechanical Engineering Technology

Mechanical Engineering Technology is concerned with the design, improvement, and installation of an integrated system of people, materials, and equipment in order to produce new and better products for society. It draws upon specialized knowledge and skills in mathematics and computer science. Men and women in the STCC program receive intensive instruction in the principles and methods of engineering analysis, and acquire a working knowledge of the complete manufacturing environment, including tools, processes, materials and engineering documentation.

The two-year associate degree program at STCC offers two options:

1. CAD/CAM (Computer-Aided Design and Computer-Aided Manufacturing)
2. CIM (Computer Integrated Manufacturing)

Upon successful completion of the requirements for the program options described below, the degree of **Associate in Science in Mechanical Engineering Technology** will be awarded.

## CORE CURRICULUM FOR BOTH OPTIONS

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
FA 112	Metal Machining 1	1	6	3
FB 135	Mechanical Drawing	2	3	3
FB 225	Intro. to CIM	3		3
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
		<hr/> 13	<hr/> 9	<hr/> 16

### COMPUTER-AIDED DESIGN/COMPUTER-AIDED MANUFACTURING (OPTION TO MECHANICAL ENGINEERING TECHNOLOGY)

This program prepares the student to take on positions such as detailers or designers using CAD systems or as engineering assistants working with professional mechanical engineers. As industries move toward blueprintless companies, CAD designers will also require a knowledge of CAM to ensure compatible data transfer. As a result, a graduate of the CAD/CAM option is poised to enter a small company where he/she could be both the designer and manufacturer.

This program develops the necessary background in mathematics, mechanics and strength of materials, engineering analysis, and computer applications.

A background in high school algebra is required.

# MECHANICAL ENGINEERING TECHNOLOGY

## SEMESTER 2

No.	Course Title	Class	Lab	Credits
FB 110	Production Processes	3		3
FB 221	Mechanics	3		3
FB 224	Machine Design	2	3	3
FB 230	CAD Level 1	2	3	3
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
		<hr/> 17	<hr/> 6	<hr/> 19

## SEMESTER 3

FA 336	CAM 1	2	3	3
FB 321	Strength of Materials	3		3
FB 336	CAD Level 2	2	3	3
FB 420	Fluid Mechanics	3		3
	Elective: Social Sciences	3		3
		<hr/> 13	<hr/> 6	<hr/> 15

## SEMESTER 4

FA 436	CAM 2	2	3	3
FB 435	CAD Level 3	2	3	3
FB 465	Advanced CAD Applications	1	3	2
MP 119	Technical Physics	3	3	4
	Elective: Humanities	3		3
		<hr/> 11	<hr/> 12	<hr/> 15

## COMPUTER-INTEGRATED MANUFACTURING (OPTION TO MECHANICAL ENGINEERING TECHNOLOGY)

This program is designed to prepare the student to enter a modern manufacturing facility that integrates design, production, cost control, and quality assurance through computer automation. The emphasis of this curriculum is to prepare graduates for employment as engineering assistants to manufacturing engineers. As a consequence, the curriculum focuses on manufacturing-related courses such as statistical process control, computer-aided cost estimated, and automated manufacturing systems.

A background in high school algebra is required.

## SEMESTER 2

No.	Course Title	Class	Lab	Credits
FA 211	Metal Machining 2	1	6	3
FA 235	CNC Programming	2	3	3
FB 110	Production Processes	3		3
FB 230	CAD Level 1	2	3	3
LE 202	Technical Report Writing	3		3
MM 232	Technical Math 2	4		4
		<hr/> 15	<hr/> 12	<hr/> 19



**SEMESTER 3**

FA 336	CAM 1	2	3	3
FB 331	Statistical Process Control	2	3	3
FB 430	Engineering Economy (Costimator)	2	3	3
FB 443	CIM Applications	2	3	3
	Elective: Social Science	3		3
		<hr/> 11	<hr/> 12	<hr/> 15

**SEMESTER 4**

FA 436	CAM 2	2	3	3
FB 418	Automated Systems Lab	2	3	3
FB 442	Manufacturing: Planning and Control	2	3	3
MP 119	Technical Physics	3	3	4
	Elective: Humanities	3		3
		<hr/> 12	<hr/> 12	<hr/> 16

Descriptions of courses offered by this department begin on page 240.

## Telecommunications Technology

This program is designed to give students a solid preparation in the skills and processes involved in writing and producing video for broadcast, cable, industrial, and medical uses.

A working knowledge of the operation and capabilities of professional video equipment is developed through extensive practice. Insights into the nature of moving-image media are gained through classroom demonstration and discussion.

The majority of students completing the Telecommunications program transfer to four-year colleges; however, others have moved directly into entry-level jobs in the industry.

**Minimum Grade Requirement:** The average of all courses taken in the Telecommunications major must be 2.0 (C) or above. Upon successful completion of the requirements for this program as listed below, the degree of **Associate in Science in Telecommunications Technology** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
GT 111	Introduction to TV Writing	4		4
GT 120	Video Techniques	2	3	3
GT 130	Video Production	2	3	3
GT 140	Intro. to Mass Communication	3		3
		<hr/> 14	<hr/> 6	<hr/> 16

## TELECOMMUNICATIONS TECHNOLOGY

### SEMESTER 2

GT 210	Advanced TV Writing	3		3
GT 220	TV Prod. & Directing	2	3	3
GT 230	Speaking on TV	3		3
GT 240	Mass Media Theory and Effects	3		3
NS 100	Introduction to Sociology	3		3
BD 300	Microcomputer Applications	3		3
		<hr/> 17	<hr/> 3	<hr/> 18

### SEMESTER 3

GT 321	TV Journalism	1	3	2
GT 331	TV Production Practicum (or elective)		6	2
GT 310	Informational Video Design	2	3	3
NP 100	General Psychology	3		3
LE 200	English Composition 2	3		3
	Elective: Humanities/Soc. Sci.	3		3
		<hr/> 12	<hr/> 12	<hr/> 16

### SEMESTER 4

GT 410	Informational Video Production	3	2	4
GT 421	TV News Production		6	2
GT 431	TV Production Practicum 2 (or elective)		6	2
GT 440	Electronic Media Systems	3		3
MP 125	Physical Science	3	3	4
		<hr/> 9	<hr/> 17	<hr/> 15

Descriptions of courses offered by this department begin on page 269.

## Drafting Technology

This one-year certificate program is designed to train students for careers in the broad field of drafting. In industry, draftsmen translate the ideas, sketches, and specifications of engineers into workable plans. Graduates of this program will find employment as detailers, draftsmen, and design draftsmen.

Students in this program have the option of continuing their education one more year and obtaining the Associate in Science degree in Mechanical Engineering Technology.

Upon the completion of the requirements for the program, a Springfield Technical Community College **Certificate in Drafting and Design Technology** will be awarded.

**SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MM 132	Technical Math 1	4		4
FA 112	Metal Machining 1	1	6	3
FB 135	Mechanical Drawing	2	3	3
FB 225	Intro. to CIM	3		3
		<hr/> 13	<hr/> 9	<hr/> 16

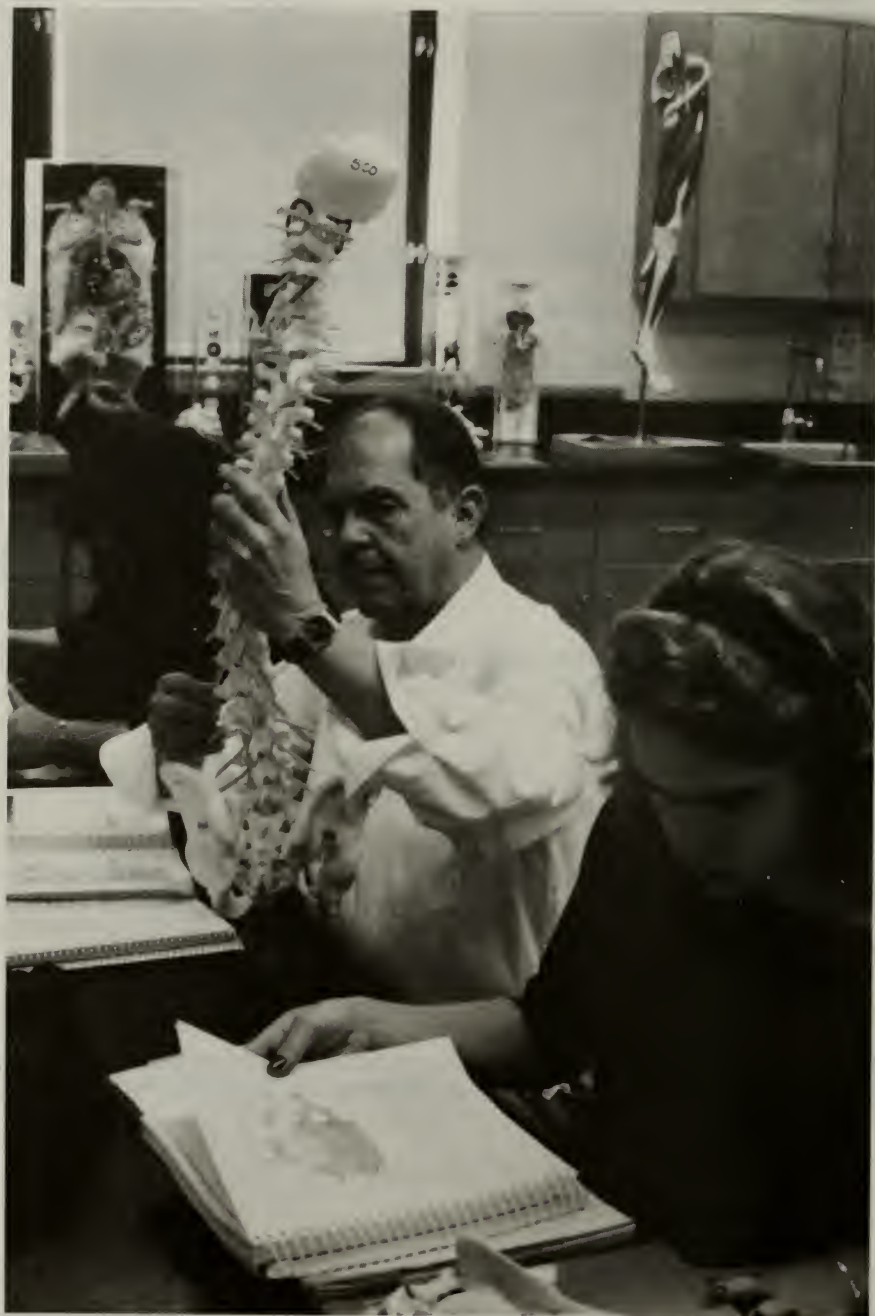
**SEMESTER 2**

GD 260	Graphics Design Lab	1	3	2
LE 202	Tech. Report Writing	3		3
FB 230	CAD Level 1	2	3	3
FB 110	Production Processes	3		3
FB 221	Mechanics	3		3
FB 224	Machine Design	2	3	3
MM 232	Technical Math 2	4		4
		<hr/> 18	<hr/> 9	<hr/> 21

Descriptions of courses offered by this department begin on page 240.



## Engineering and Science Transfer



The Engineering and Science Transfer Program was established in 1968 to provide students with the university parallel courses needed to pursue a baccalaureate degree in engineering or science. In addition to completing the first two years of a baccalaureate degree, the student receives the degree of Associate in Science in Engineering and Science Transfer with the following concentrations:

Engineering	ME-1
Computer Science	ME-2
Technical Engineering	ME-3
Biology	ME-4
Chemistry	ME-5
Physics/Mathematics	ME-6
Pre-med/Pre-dental/Pre-vet	ME-7
Pre-pharmacy	ME-8

STCC's Engineering and Science Transfer department has been recognized as a Center for Excellence in Engineering, and annually transfers students to four-year colleges and universities all across the country. Locally, the Engineering and Science Transfer program participates in the Dual Admission program with the University of Massachusetts, and has 2+2 articulation agreements with Western New England College, Worcester Polytechnic Institute, and Rensselaer Polytechnic Institute. RPI also annually presents the RPI Medal Award to one of the outstanding graduates of STCC's Engineering and Science Transfer program. This medal is accompanied by a substantial financial aid award to attend RPI.

STCC's Engineering and Science Transfer department is one of the leaders in integrating the computer with the curricula. AT&T has recognized these efforts with a donation of a completely networked, state-of-the-art microcomputer laboratory. STCC was one of only two community colleges in the nation to receive a donation from AT&T's University Equipment Donation program. Through this laboratory, students have access to the most modern software in computer languages (Pascal, Fortran, C), word processing, spreadsheets, CAD/CAM and other numerous mathematical analysis and simulation packages. Students also utilize modern labs in chemistry, physics, electronics, and materials sciences.

### Entrance Requirements

In order to be admitted to one of the Engineering and Science Transfer programs, an applicant should have completed two years of algebra, one year of geometry, one year of trigonometry or senior math, and one year each of chemistry, biology, and physics with grades of "B" or better. Applicants should also have achieved minimum SAT scores of 500 in math and 350 in English.

Applicants not meeting all of the entrance requirements may still be considered, but should understand that it might require additional time and effort on their part in order to prepare themselves for the required mathematics and science courses in the Engineering and Science Transfer programs. Applicants not deemed ready to enter the program are offered an alternate acceptance to the General Studies program Pre-Engineering core. Students typically spend one year in this core remedying their academic deficiencies in the mathematics and sciences, and then reapply to the Engineering and Science Transfer program.

# Engineering Transfer Option

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 1	3	3	4
ME 108	Intro. to Computing (Pascal) (or)			
ME 203	Computer Applications in Engineering	3	3	4
MM 155	Calculus 1	6		4
	Elective: Social Science	3		3
		<hr/> 18	<hr/> 6	<hr/> 18

## SEMESTER 2

MP 132	University Physics 1	3	3	4
MC 203	General Chemistry 2	3	3	4
MM 255	Calculus 2	6		4
ME 108	Pascal (or)			
ME 203	Comp. Applic. in Engineering (or)			
MK 203	The C Programming Language	3	3	4
	Elective: English	3		3
		<hr/> 18	<hr/> 9	<hr/> 19

## SEMESTER 3

MP 232	University Physics 2	3	3	4
	Elective: Math, Science, or Engineering	3		3
	Elective: Engineering	3		3
MM 355	Calculus 3	6		4
	Elective: Social Science or Humanities	3		3
		<hr/> 18	<hr/> 3	<hr/> 17

## SEMESTER 4

	Elective: Engineering	3		3
	Elective: Engineering	3		3
	Elective: Math, Science, or Engineering	3		3
MM 439	Linear Algebra	3		3
	Elective: Social Science or Humanities	3		3
		<hr/> 15		<hr/> 15

By choosing the appropriate math, science, and engineering electives in the 3rd and 4th semesters, a student can major in Chemical, Civil, Computer, Electrical, Environmental, Industrial or Mechanical Engineering.

Descriptions of courses offered by this department begin on page 210.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

# Computer Science Transfer Option

## SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 1	3	3	4
ME 108	Intro. to Computing (Pascal) (or)			
MK 103	Intro. to Computer Programming 1	3	3	4
MM 155	Calculus 1	6		4
	Elective: Social Science	3		3
		<hr/> 18	<hr/> 6	<hr/> 18

## SEMESTER 2

LE 200	Composition 2: Intro. to Lit.	3		3
MC 203	General Chemistry 2	3	3	4
MK 203	The C Programming Language	3	3	4
MM 255	Calculus 2	6		4
	Elective: Humanities or Soc. Science	3		3
		<hr/> 18	<hr/> 6	<hr/> 18

## SEMESTER 3

MK 320	Computer Organization & Digital Logic	3		3
MK 401	Data Structures & Algorithms	3	3	4
MM 375	Discrete Mathematical Structures 1	3		3
	Elective: Humanities or Soc. Science	3		3
	Elective: Soc. Science or Humanities	3		3
		<hr/> 15	<hr/> 3	<hr/> 16

## SEMESTER 4

MM 345	Statistical Analysis	4		4
MM 475	Discrete Mathematical Structures 2	3		3
MM 439	Linear Algebra	3		3
MK 310	Machine and Assembly Language	3	3	4
	Elective: Humanities	3		3
		<hr/> 16	<hr/> 3	<hr/> 17

Descriptions of courses offered by this department begin on page 190.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.



## Technical Engineering Option

The Technical Engineering Option is a general technology program. It is for students who do not want to major in any specific technology but want a broad background. If, after spending one year in this option, a student becomes interested in a specific technology, it is possible for him to transfer to that technology.

This program is also designed to interface with both the Engineering Transfer Program and the Pre-Engineering Option (Level 2) of the General Studies Program. A student, after spending one year in either of these programs, may transfer to the Technical Engineering option with no loss of credit. A student who completes the entire Technical Engineering option is awarded the **Associate in Science Degree in Engineering and Science Transfer**.

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 100	College Chemistry (or)			
MC 103	General Chemistry 1	3	3	4
ET 115	Electronic Lab 1		4	2
ET 110	Basic Electronics 1	3		3
MM 132	Technical Math 1 (or)			
MM 155	Calculus 1	6		4
		<hr/> 15	<hr/> 7	<hr/> 16

### SEMESTER 2

LE 202	Technical Report Writing	3		3
ME 203	Computer Applications in Engin. (or)			
FB 230	CAD Level 1	2	3	3
MM 140	Statistics and Quality Control	3		3
MM 232	Technical Math 2 (or)			
MM 255	Calculus 2	6		4
MP 119	Technical Physics (or)			
MP 132	University Physics 1	3	3	4
		<hr/> 17	<hr/> 6	<hr/> 17

### SEMESTER 3

GC 310	Surveying 1	2	6	4
GC 345	Statics and Strength of Materials (or)			
ME 310	Mechanics 1	3		4
ME 108	Intro. to Computing (Pascal)	3	3	4
MM 155	Calculus 1 (or)			
MM 355	Calculus 3	4		4
NE 100	Economics 1	3		3
		<hr/> 15	<hr/> 9	<hr/> 19

**SEMESTER 4**

FB 420	Fluid Mechanics (or)			
ME 350	Engineering Thermodynamics 1	3		3
ME 335	Mechanics of Materials (or)			
GC 445	Structures	3	3	4
MM 255	Calculus 2 (or)			
MM 455	Differential Equations	4		4
	Elective: Social Sci./Humanities	3		3
	Elective: Math/Science	3		3
		<hr/> 16	<hr/> 3	<hr/> 17

## Science Transfer Option

**BIOLOGICAL SCIENCES TRANSFER PROGRAMS**

Springfield Technical Community College offers several biology transfer programs from which its graduates are well-qualified to enter the junior year of a biology major, pre-med major, pre-vet major, pre-dental major, or a pharmacy major. Students are advised by biology faculty members who will guide them in course selections to meet the requirements of the various colleges and universities to which the students may apply.

Students who cannot meet all the requirements for the degree of Engineering and Science Transfer may consider the option of an Associate degree in Liberal Arts Transfer or General Studies, while pursuing the goal of transferring to a four-year college to continue studies in the biological sciences.

**Biology Option****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 1	3	3	4
MB 106	Biology 1	3	3	4
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
MM 155	Calculus 1 (or)			
MM 132	Technical Math 1	6		4
		<hr/> 18	<hr/> 6	<hr/> 18

**SEMESTER 2**

MC 203	General Chemistry 2	3	3	4
MB 206	Biology 2	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
NP 100	General Psychology	3		3
MM 255	Calculus 2 (or)			
MM 232	Technical Math 2	6		4
		<hr/> 18	<hr/> 6	<hr/> 18

## ENGINEERING AND SCIENCE TRANSFER

### SEMESTER 3

MC 320	Organic Chemistry 1	3	4	4
	Elective: Biology	3	3	4
	Elective: Social Science	3		3
MM 155	Calculus 1 (or)			
MM 355	Calculus 3	4		4
MP 130	College Physics 1	3	3	4
		<hr/> 16	<hr/> 10	<hr/> 19

### SEMESTER 4

MC 420	Organic Chemistry 2	3	4	4
	Elective: Biology	3	3	4
	Elective: Humanities	3		3
MM 255	Calculus 2 (or)			
MM 140	Statistics and Quality Control	3		3
MP 230	College Physics 2	3	3	4
		<hr/> 15	<hr/> 10	<hr/> 18

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

### Pre-Med/Pre-Dental/Pre-Vet Option

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 1	3	3	4
MB 106	Biology 1	3	3	4
LE 100	English Composition 1	3		3
NS 100	Intro. to Sociology	3		3
MM 132	Technical Math 1 (or)			
MM 155	Calculus 1	6		4
		<hr/> 18	<hr/> 6	<hr/> 18

#### SEMESTER 2

MC 203	General Chemistry 2	3	3	4
MB 206	Biology 2	3	3	4
LE 200	Comp. 2: Intro. to Lit.	3		3
	Elective: General	3		3
MM 232	Technical Math 2 (or)			
MM 255	Calculus 2	6		4
		<hr/> 18	<hr/> 6	<hr/> 18

#### SEMESTER 3

MP 130	College Physics 1	3	3	4
MC 320	Organic Chemistry 1	3	4	4
NP 100	General Psychology	3		3
	Elective: Biology	3	3	4
	Elective: General	3		3
		<hr/> 15	<hr/> 10	<hr/> 18

# ENGINEERING AND SCIENCE TRANSFER

## SEMESTER 4

MC 420	Organic Chemistry 2	3	4	4
MP 230	College Physics 2	3	3	4
	Elective: Biology*	3	3	4
	Elective: Humanities	3		3
	Elective: Social Science	3		3
		<hr/> 15	<hr/> 10	<hr/> 18

\*Check curriculum of school you plan to attend to determine what this elective should be.

Upon the successful completion of the requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

## Pre-Pharmacy Option

### SEMESTER 1

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
MC 103	General Chemistry 1	3	3	4
MB 106	Biology 1	3	3	4
MM 132	Technical Mathematics 1	4		4
	Elective: Social Science	3		3
		<hr/> 16	<hr/> 6	<hr/> 18

### SEMESTER 2

LE 200	Comp. 2: Intro. to Lit.	3		3
MC 203	General Chemistry 2	3	3	4
MB 206	Biology 2	3	3	4
MM 232	Technical Mathematics 2	4		4
	Elective: Social Science	3		3
		<hr/> 16	<hr/> 6	<hr/> 18

### SEMESTER 3

MP 130	College Physics 1	3	3	4
MC 320	Organic Chemistry 1	3	4	4
AA 101	Med. Terminology 1	3		3
NS 100	Intro. to Sociology	3		3
	Elective: Humanities	3		3
		<hr/> 15	<hr/> 7	<hr/> 17

### SEMESTER 4

MP 230	College Physics 2	3	3	4
MC 420	Organic Chemistry 2	3	4	4
LE 203	Fundamentals of Speech	3		3
	Elective: Humanities	3		3
	Elective: Social Sci.	3		3
		<hr/> 15	<hr/> 7	<hr/> 17



## ENGINEERING AND SCIENCE TRANSFER

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

### Chemistry Option

#### SEMESTER 1

No.	Course Title	Class	Lab	Credits
MC 103	General Chemistry 1	3	3	4
LE 100	English Composition 1	3		3
	Elective: Humanities/For. Lang.*	3		3
MM 155	Calculus 1	6		4
ME 203	Computer Applications in Engineering	3	3	4
		<u>18</u>	<u>6</u>	<u>18</u>

#### SEMESTER 2

MC 203	General Chemistry 2	3	3	4
MM 140	Statistics and Quality Control	3		3
LE 200	Comp. 2: Intro. to Lit.	3		3
MM 255	Calculus 2	6		4
	Elective: Humanities	3		3
		<u>18</u>	<u>3</u>	<u>17</u>

#### SEMESTER 3

MC 320	Organic Chemistry 1	3	4	4
MP 130	College Physics 1	3	3	4
	Elective: Technical	3		3
MM 355	Calculus 3	4		4
	Elective: Social Science	3		3
		<u>16</u>	<u>7</u>	<u>18</u>

#### SEMESTER 4

MC 420	Organic Chemistry 2	3	4	4
	Elective: Technical	3		3
	Elective: Social Science	3		3
MM 455	Differential Equations	4		4
MP 230	College Physics 2	3	3	4
		<u>16</u>	<u>7</u>	<u>18</u>

\*Most four-year institutions require 2 years of a language, preferably German.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

**Physics/Mathematics Option****SEMESTER 1**

No.	Course Title	Class	Lab	Credits
LE 100	English Composition 1	3		3
	Elective: Humanities/Foreign Lang.*	3		3
MM 155	Calculus 1	6		4
ME 108	Intro. to Computing (Pascal)	3	3	4
MC 103	General Chemistry 1	3	3	4
		<hr/> 18	<hr/> 6	<hr/> 18

**SEMESTER 2**

LE 200	Comp. 2: Intro. to Lit.	3		3
MM 255	Calculus 2	6		4
	Elective: Humanities/For. Lang.*	3		3
MC 203	General Chemistry 2	3	3	4
MP 132	University Physics 1	3	3	4
		<hr/> 18	<hr/> 6	<hr/> 18

**SEMESTER 3**

	Elective: Soc. Sci./For. Lang.*	3		3
	Elective: Social Science	3		3
MM 355	Calculus 3	6		4
MP 232	University Physics 2	3	3	4
	Elective: Technical	3		3
		<hr/> 18	<hr/> 3	<hr/> 17

**SEMESTER 4**

	Elective: Soc. Sci./For. Lang.*	3		3
MM 455	Differential Equations	6		4
MP 332	University Physics 3 (or)			
MM 439	Linear Algebra	3		3
	Elective: General**	3		3
	Elective: Technical	3		3
		<hr/> 18		<hr/> 16

\*Most four-year institutions require 2 years of a language, preferably German, for a physics major.

\*\*Check curriculum of school you plan to attend to determine what this elective should be.

Upon the successful completion of requirements for this program, as listed above, the degree of **Associate in Science in Engineering and Science Transfer** will be awarded.

# Course Descriptions



Accounting  
(See Business Administration)

Anthropology  
(See Sociology/Anthropology)

Automotive Technology

**IA 110 — GAS ENGINE SYSTEMS**

3 credits

This course deals with the pre-delivery service and maintenance aspects of vehicle preparation, including headlight aiming, wind and water leaks, and maintenance schedules, which include cooling, lubrication, oil filtration, belts, hoses, batteries, spark plugs, engine compression, fuel pumps, and exhaust systems. Laboratory exercises check, test, and service these systems.

*Offered Fall Semester*

**IA 120 — DRIVELINE AND AIR CONDITIONING**

3 credits

The driveline component includes the function, construction, operation, servicing, and trouble-shooting of automotive clutch assemblies. Also included is a study of the types of drive-lines, differentials, universal joints, RWD, FWD, and 4-wheel drive vehicles. The air conditioning component involves the study of basic automotive air conditioning systems, including principles of refrigeration, testing, and servicing climate control systems, as well as automatic temperature controls.

*Offered Summer Session*

**IA 130 — INTRODUCTION TO AUTOMOTIVE SERVICE**

2 credits

This course introduces the student to the automotive industry, including dealer operations, service and parts department procedures, typical pay structures, shop safety, service publications, basic vehicle overview, hand and power tool usage, and automotive measuring devices and systems.

*Offered Fall Semester*

**IA 210 — GASOLINE ENGINES SERVICE**

3 credits

This is a study of the principles of the 4-stroke engine, involving construction, operation, identification of engine systems, trouble-shooting, overhaul techniques. Cylinder head and valve train diagnosis is explored, as is engine noise analysis. The lab portion of this course will encompass disassembly and reassembly of complete engines; repair and overhaul procedures; inspection, repair, and measurement of all components.

*Offered Spring Semester*

**IA 220 — AUTOMATIC TRANSMISSIONS**

3 credits

This course studies the operation, servicing, and repair of the modern automotive transmission for both front- and rear-wheel drive automobiles. Included are fluid couplings, hydraulic controls, torque converters, seals and adjustments. Students participate in disassembly, overhaul, and reassembly of selected transmissions, and adjustment procedures used in repairing these power train units.

*Offered Fall Semester*

**IA 310 — FUEL AND ELECTRIC SYSTEMS**

3 credits

The fuel system of the modern automobile is studied, including the theory, operation, and repair procedures for gasoline-equipped vehicles. Specifically, the course covers carburetion principles, fuel/air ratio requirements, fuel pumps, electronic fuel injection, turbocharging, exhaust sensors, and emissions testing. Also, the fundamentals of automotive electrical circuitry is studied, including alternators and starting systems.

*Offered Spring Semester*



## AUTOMOTIVE TECHNOLOGY

### **IA 330 — BRAKES AND SUSPENSIONS**

3 credits

This course is a study of basic hydraulics, wheel and master cylinders, calipers, disc and anti-lock brakes, power units, and system bleeding. Instruction in machining drums and discs is given, using modern service equipment. Also included is the study of steering geometry, linkages, suspension systems, and alignment service.

*Offered Fall Semester*

### **IA 335 — AUTOMOTIVE SCHEMATIC READING**

1 credit

This course provides the student with the skills to recognize schematic symbols, and their use and function in automotive schematic drawings. Students also learn to interpret these diagrams for the information and repair of automotive electrical and electronic systems.

*Offered Spring Semester*

### **IA 420 — ENGINE DIAGNOSIS AND TUNE-UP**

3 credits

This course covers the theory of operation and testing of all components in the conventional and electronic ignition systems. A study of engine tune-up, exhaust emission devices, and diagnosis using modern test instruments, scopes, and infra-red exhaust analyzers is made. Students participate in bench work and actual service problems, using the latest electronic devices. Environmental rules and regulations and their effect on the automotive industry will also be discussed. PREREQUISITE: IA 110.

*Offered Fall Semester*

### **IA 430 — ADVANCED AUTOMOTIVE SYSTEMS**

3 credits

This course focuses on the most up-to-date systems used in today's automobiles. Emphasis is placed on the servicing and diagnosis of such systems as electronic ignition, electronic fuel ignition, turbo-charged power plants, and computer-controlled emission devices. Proper trouble-shooting techniques are emphasized and practiced as students participate in lab assignments. PREREQUISITES: IA 310 and ET 345.

*Offered Spring Semester*

### **IA 432 — APPLIED AUTOMOTIVE ELECTRONICS**

3 credits

Advanced topics such as electronic engine control strategies, automotive microcomputer systems, speed control systems, and electronic instrumentation (message center/trip minder, instrument cluster, fuel computer, and keyless entry) will be studied in detail. Emphasis on diagnosis and servicing these systems will be stressed. PREREQUISITES: ET 345 and IA 310.

*Offered Spring Semester*

## Bio-Medical Instrumentation Technology

### **EB 120 — MEASURING PRINCIPLES 1**

3 credits

Transducers used for temperature, pressure and flow measurements are discussed along with related concepts in physics. Effort is concentrated on such topics as sensitivity, resolution, recordability, linearity and accuracy, with reference to the above transducers. Although not a prerequisite, knowledge of the algebra of linear equations, exponential functions, as well as elementary Trigonometry will be helpful.

*Offered Fall Semester*

### **EB 230 — MEASURING PRINCIPLES 2**

3 credits

This course is an extension of EB 120, Measuring Principles 1, where the interest is shifted to acoustical, optical, and radiological devices.

*Offered Spring Semester*

### **EB 310 — BIO-MED SYSTEMS 1**

3 credits

This course provides an introduction to medical equipment. Major emphasis is placed on understanding the operation and application of medical instrumentation used in hospitals.

*Offered Fall Semester*

**EB 330 — SEMI-CONDUCTORS LAB**

2 credits

An extension and expansion of material covered in ET 220 Active Networks 1. This course will emphasize the laboratory demonstration and investigation of solid-state devices and circuit identification and troubleshooting. PREREQUISITES: ET 110, ET 210, ET 220.

*Offered Fall Semester***EB 340 — DIGITAL ELECTRONICS LAB**

2 credits

This course is a continuation of the laboratory sequence. Digital components such as AND, OR, and NOR gates will be studied. Additional investigations will include the study of flip-flops, drivers, counters, and displays. PREREQUISITES: ET 110, ET 220.

*Offered Fall Semester***EB 350 — DIGITAL ELECTRONICS**

3 credits

An introductory course to Digital Electronics Concepts and Components. Topics include number systems, Boolean algebra, gates, combinational logic, flip-flops, counters, registers and memories. Logic families such as TTL, CMOS, and ECL will be studied with regard to propagation speed, power consumption, and frequency response.

*Offered Fall Semester***EB 410 — BIO-MED SYSTEMS 2**

3 credits

This course, a continuation of EB 310, provides the time and opportunity for students to work on instruments, observing their design, fabrication, assembly testing, and test figures. The student is expected to cultivate the art of recognizing a correctly operating instrument and an incorrectly operating unit. The training of his/her judgment to access and repair or replace a defective component is crucial to performance on the job. PREREQUISITE: Senior standing in Bio-Medical Instrumentation Technology. Restricted to Bio-Med students.

*Offered Spring Semester***EB 420 — INSTRUMENTATION PROJECT**

2 credits

The student is to apply his developed theoretical and practical knowledge into the production of a project meeting course requirements. The student must select and develop an original project of his own choosing with complete paper and physical documentation as required by the project advisor. PREREQUISITE: Senior Standing.

*Offered Spring Semester***EB 430 — CODES, LAWS AND SAFETY**

1 credit

The student is required to become aware of enforcing agencies and their software. He must know the intent and purpose of those standards. In addition, he must understand how to be in compliance with regulations. PREREQUISITE: Senior Standing.

*Offered Spring Semester***EB 440 — INTEGRATED CIRCUITS**

3 credits

Students will be introduced to the operational amplifier and other linear integrated circuits. Topics will include both positive and negative feedback systems used with the op-amp to produce stability and reduce noise. Timers, comparators, voltage level detectors, signal generators, and filters will be treated.

*Offered Fall Semester*

## Biological Sciences

**MB 089 — MATH/SCIENCE WORKSHOP**

3 credits

The Math/Science Workshop is designed to develop the student's ability to integrate scientific methodology with mathematical processes. Gathering of scientific data, experimentation procedures, laboratory techniques, and the applied mathematical background necessary to perform the laboratory procedures are stressed. By permission.

*Offered Summer Session Only***MB 090 — BASIC BIOLOGICAL SCIENCE**

4 credits

An Interdisciplinary, entry-level course in experimental biology. The traditional 5 skills of the scientific method are reinforced in both reading and lab-based science areas. The basic

## BIOLOGICAL SCIENCES

and integrated process skills employed by scientists are developed to prepare the student for college-level science experiences. NO PREREQUISITES.

*Offered Fall and Spring Semesters*

### **MB 100 — NATURAL HISTORY**

4 credits

This course is designed to provide a basic background in botany, zoology and ecology. Field studies and laboratory experiences are designed to help potential pre-school teachers develop programs for their classes.

*Offered Spring Semester*

### **MB 102 — PRINCIPLES OF BIOLOGY 1**

4 credits

Principles of Biology is an introductory course designed to meet the needs of the student who has no background in chemistry or biology. Principles of Biology 1 is the first of a two-semester presentation of the basic concepts of life science for the transfer student who does not wish to major in science, and for the health career program candidates for whom biology is a prerequisite. The first semester provides an introduction to fundamental biological concepts including: the characteristics of life, cell structure and function, the process of cell division, and the basic concepts of genetics. PREREQUISITES: MB 090 or completion of LD 091 (or placement above)

*Offered Fall and Spring Semester*

### **MB 104 — HUMAN BIOLOGY 1**

4 credits

This biology course, required for the Medical Assistant and Medical Office Administration programs but open to all students, provides a basic knowledge of the structure and function of the human body. The course integrates the study of anatomy and physiology with basic chemistry and microbiology, studying normal systematic functions and diseases related to malfunctioning of these systems. Units studied include chemistry, cellular tissues, microbiology, skeletal system, muscle system, and nervous system, accompanied by related laboratory procedures. NO PREREQUISITE.

*Offered Fall Semester*

### **MB 106 — GENERAL BIOLOGY 1**

4 credits

Geared to the prospective science major, the first semester of this course provides an introduction to the methods of science followed by a discussion of the molecular basis of biology and the architecture of cells and tissues. Consideration is then given to the central energy pathways — cellular respiration and photosynthesis. An in-depth coverage of cellular reproduction, classical and molecular genetics follows. The semester concludes with a study of the origins and diversity of life. PREREQUISITE: High School chemistry and biology or permission of the instructor. Honors component available.

*Offered Fall Semester*

### **MB 108 — GENERAL BOTANY**

4 credits

A one semester, non-majors course which does not require prior courses in biology, chemistry, or mathematics. In addition to providing an overview of the basic concepts of plant morphology and physiology, a survey is made of the major plant groups.

*Offered Spring Semester*

### **MB 109 — BIOLOGY OF MAN**

3 credits

This course is designed to meet the needs of the student who has no background in biological science. Basic biological concepts are presented with emphasis on the human body. This is a one-semester course, restricted to Spanish-speaking students, for those who require 3 credit hours in a non-laboratory science.

*Offered Fall Semester*

### **MB 113 — MAN AND HIS ENVIRONMENT**

4 credits

Man and His Environment is a four credit lab course designed to meet the needs of the non-science major. Presupposing no background in science, it focuses on man's interdependence with nature. The first half of the course emphasizes major principles of ecosystems while the second half deals with the entire spectrum of environmental problems affecting man and the possible solutions to them. PREREQUISITES: None.

*Contingent upon enrollment of 12 or more students*



**MB 121 — MICROBIOLOGY**

4 credits

A basic study of microorganisms, their activities, destruction and control. The concepts of infection, immunity and hypersensitivity precede the survey of the microbiology of major infectious diseases. **PREREQUISITES:** High School Chemistry and Biology.

*Offered Fall and Spring Semester*

**MB 122 — ENVIRONMENTAL MICROBIOLOGY**

4 credits

A general investigation of the structure, growth and physiology of microorganisms and macroinvertebrates. Particular attention is paid to the roles these organisms play in the environment. The course meets for three hours of lecture and three hours of lab each week. **PREREQUISITES:** MB 102 Principles of Biology, MC 101 General Chemistry, or permission of instructor.

*Offered Fall Semester*

**MB 127 — FUNCTION AND STRUCTURE OF HUMAN SYSTEMS**

3 credits

This course will present an overview of human anatomy and physiology as well as an introduction to microbiology. Normal structure and function of the selected systems will be discussed as well as the diseases and abnormalities associated with those systems. Microbial structure, transmission of microbial infections, and immunology will be discussed. The principal objective is to offer the student a better appreciation of the human body and its integrative functions. **NO PREREQUISITE.**

*Offered Fall Semester*

**MB 132 — ANATOMY & PHYSIOLOGY 1**

4 credits

A comprehensive study of the structure and function of the human body, emphasizing the normal which will serve as a background for the application of scientific principles both in everyday life and in the work of various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles and the nervous system. **PREREQUISITES:** Biology and Chemistry.

*Offered Fall Semester*

**MB 133 — ANATOMY & PHYSIOLOGY/CLS**

4 credits

A series of lectures and laboratory experiences designed to provide students with a general understanding of the structure of the human body with emphasis placed on major physiological principles. Three lecture hours and one three-hour laboratory. **PREREQUISITES:** High school biology and chemistry.

*Offered Fall Semester*

**MB 136 — APPLIED PHYSIOLOGY**

4 credits

This course takes various concepts in human physiology and by a lecture-laboratory approach the physiological principles are explained and illustrated by laboratory experience and clinically oriented tests. The instrumentation and methodology used in studying physiology and making clinical evaluation are emphasized. Aspects of the cardiovascular, respiratory, excretory, immune and nervous systems are investigated in this course. **PREREQUISITE:** Biology.

*Offered Spring Semester*

**MB 138 — HUMAN ANATOMY 1**

4 credits

This is a course requiring no prior biological background. The organization of the human body from the cellular level to the various organ systems is included. Consideration of the pathological process in the human is integrated into the discussion of each organ system. This course combines lectures and appropriate demonstrations of physiological function. The first semester will include a consideration of cells and tissue and an emphasis on the regulatory systems of the body with particular emphasis on the nervous system. Laboratory skills are stressed.

*Offered Fall Semester*



## BIOLOGICAL SCIENCES

### **MB 140 — BIOCHEMISTRY FOR HEALTH SCIENCES**

3 credits

An introduction to biochemical principles. Emphasis is on the major metabolic pathways, the mechanisms of enzyme action, bioenergetics and the role of hormones and other regulatory substances. **PREREQUISITES:** General Biology, or Anatomy & Physiology, General Chemistry or permission of the instructor.

*Offered Fall and Spring Semesters*

### **MB 142 — INTRODUCTORY NUTRITION**

3 credits

Application of nutrition principles in the planning, selection and preparation of foods to meet one's physical, social and economic needs. Discussion of current issues such as vegetarianism, health foods, fad diets, weight control, food additives/preservatives, nutrition labeling, stretching the food dollar, and safe food handling will be presented. **PREREQUISITES:** None.

*Offered Spring Semester*

### **MB 143 — FUNDAMENTALS OF ANATOMY & PHYSIOLOGY I**

3 credits

This course outlines the organization of the human body from the single cell to the coordinated whole, with emphasis on the interaction of all body systems. Special attention is paid to clinical and pathological conditions, and an extensive vocabulary of medical terminology will be incorporated. **RESTRICTED TO COURT REPORTING AND OFFICE ADMINISTRATION.**

*Offered Fall Semester*

### **MB 146 — ESSENTIALS OF HUMAN BIOLOGY I**

3 credits

This course, restricted to students enrolled in the Cosmetology program, will present an overview of human anatomy and physiology with an introduction to microbiology. Interaction of all body systems is discussed with emphasis on those topics relating to Cosmetology. Specific topics included are cell structure, tissues, and the skeletal, muscular, and nervous systems. **NO PREREQUISITES.**

*Offered Fall Semester*

### **MB 202 — PRINCIPLES OF BIOLOGY 2**

4 credits

This course is a continuation of Principles of Biology 1 in which the following topics will be discussed: the diversity of life, its changes through time, and the interrelationships among life forms within ecosystems. Comparative studies of organ and system development within the five kingdoms are integrated into discussion of these concepts. This is a transferable course for non-science majors. **PREREQUISITE:** MB 102 Principles of Biology 1.

*Offered Fall and Spring Semesters*

### **MB 204 — HUMAN BIOLOGY 2**

4 credits

As a continuation of Human Biology 1, this course includes units in the endocrine, circulatory, digestive, respiratory, urinary and reproductive systems. Laboratory procedures stressed in hematology, cardiovascular system, and urinalysis accompanied by dissection of appropriate animal specimens and microscopic studies. **PREREQUISITE:** MB 104.

*Offered Spring Semester*

### **MB 206 — GENERAL BIOLOGY 2**

4 credits

A continuation of General Biology 1 in which the general morphology and physiology of representatives from all the major kingdoms are discussed. Considerable attention is given to the study of the vascular plant body and vertebrate systems. The final topics covered include evolution, animal behavior, and ecology. **PREREQUISITE:** MB 106. Honors component available.

*Offered Spring Semester*

### **MB 209 — BIOLOGY OF MAN 2**

3 credits

This second semester is a continuation of MB 109. Certain concepts covered in the first semester are expanded in order to gain an understanding of the human body and man's interaction with his environment, while others are examined on a molecular level to comprehend the cellular approach to modern biology. This course will benefit those students going into the health fields, especially those taking Anatomy & Physiology or Human Biology in the future. Topics include: biochemistry, human anatomy and physiology, reproduction and development, modern genetics, modern evolution, and ecology. **PREREQUISITE:** MB 109.

*Offered Spring Semester*

**MB 232 — ANATOMY & PHYSIOLOGY 2**

4 credits

A continuation of Anatomy & Physiology 1 concentrating on circulatory, respiratory, digestive, urinary, endocrine, and reproductive systems. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking and overview of the body as a whole. **PREREQUISITE:** Anatomy & Physiology 1 (MB 132).

*Offered Spring Semester*

**MB 238 — HUMAN ANATOMY 2**

4 credits

The second semester is a continuation of MB 138 and will include a consideration of the cardiovascular, respiratory, digestive, urinary and reproductive systems. **PREREQUISITE:** Human Anatomy 1 (MB 138).

*Offered Spring Semester*

**MB 243 — FUNDAMENTALS OF ANATOMY & PHYSIOLOGY 2**

3 credits

This is a continuation of MB 143, **RESTRICTED TO COURT REPORTING & OFFICE ADMIN.**

*Offered Spring Semester*

**MB 246 — ESSENTIALS OF HUMAN BIOLOGY 2**

3 credits

This course is a continuation of MB 146. Emphasis is placed on biochemistry, and the cardiovascular, respiratory, digestive, urinary, and reproductive systems. **PREREQUISITE:** MB 146.

*Offered Spring Semester*

**MB 320 — HISTOLOGY**

4 credits

A study of the microscopic anatomy of cells, tissues, and organs as related to function. Emphasis is on mammalian systems. Discussion of microtechnique, electrophotomicroscopy, and tissue culturing will be introduced. **PREREQUISITES:** Biology (MB 106, MB 206); or Anatomy & Physiology (MB 132, MB 232); or Human Biology (MB 104, MB 204); or permission of instructor.

*Contingent upon enrollment of 12 or more students.*

**MB 340 — CROSS-SECTIONAL ANATOMY**

3 credits

An examination of human anatomy in transverse, sagittal, coronal, and oblique planes in order to enable the student to identify the structures seen in each plan and to visualize any portion of the anatomy as it relates to the body as a three-dimensional whole and to the ultrasound imaging planes. **PREREQUISITES:** MB 132, MB 232.

*Offered Spring Semester*

**MB 350 — EMBRYOLOGY**

4 credits

This course will expose the student to the fundamental growth processes and mechanisms that govern normal growth and development in the frog, chick, and pig embryos. Emphasis will be placed on the development of major organs and organ systems and how these systems develop into normal adult structures. Laboratory experiments, models and slides will be used to reinforce the basic principle of normal development and thus provide a basis for the discussion of abnormal development. **PREREQUISITES:** Biology (MB 106, MB 206); or Biology (MB 102, MB 202); or Anatomy & Physiology (MB 132, MB 232); or permission of instructor.

*Contingent upon enrollment of 12 or more students*

**MB 360 — GENETICS**

4 credits

An introduction to the principles of classical and biochemical genetics, surveying microbial genetics, population genetics and human heredity. Laboratory experiments are designed to demonstrate the major principles discussed in lecture. **PREREQUISITE:** General Biology, Anatomy & Physiology, General Chemistry or permission of instructor. Honors component available.

*Contingent upon enrollment of 12 or more students*

**MB 410 — BIOLOGICAL LITERATURE: AN ANALYSIS AND INTERPRETATION**

1 credit

This course is designed to introduce the student to the methods of finding, evaluating, and using research literature in the biological sciences. In addition to familiarizing the student with the use of library and recommended procedures for conducting bibliographic searches, group discussions will focus on scientific methodology, data analysis, and the systematic evaluation of research papers. Independent written and oral presentation of an assigned

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topic will be required. PREREQUISITES: MB 106 and MB 206, or MB 132 and MB 232, or permission of instructor. Honors component available.

*Offered Spring Semester*

### **MB 900 — DIRECTED STUDY IN THE BIOLOGICAL SCIENCES**

variable credit

Semester hour credit will vary from one to four, depending upon the written, agreed-upon, approved, student/professor contract. PREREQUISITE: Permission of instructor.

## Business Administration ACCOUNTING

### **BA 098 — ELEMENTARY ACCOUNTING**

4 credits

An introductory course designed to present to the student the concepts and principles of accounting. Major emphasis is placed upon recording, classifying, and summarizing of the financial data generated within a service or merchandise sole proprietorship business.

*Offered Fall and Spring Semesters*

### **BA 110 — ACCOUNTING 1**

4 credits

An introductory course designed to present to the student the concepts and principles of financial accounting. The fundamental techniques of the basic accounting system and the accounting cycle for service and merchandise concerns are examined. Additionally, topics such as specialized journals, cash controls, accounts and notes receivable, inventory, notes payable, payroll, and long-term assets are discussed. PREREQUISITE: None.

*Offered Fall and Spring Semesters*

### **BA 210 — ACCOUNTING 2**

4 credits

This course is designed to complete the story of financial accounting, and to present the concepts and principles of managerial accounting. The course will entail a limited discussion of partnership and a more detailed study of corporations, including corporate capital structure and related transactions, bond, investments, statements of cash flow, and financial statement analysis. In addition, managerial topics such as manufacturing cost accounting, budgeting, cost/volume/profit analysis, decision-making, and capital budgeting will be examined. PREREQUISITE: BA 110.

*Offered Fall and Spring Semesters*

### **BA 310 — INTERMEDIATE ACCOUNTING 1**

3 credits

This course is designed to provide the student with a comprehensive study of the generally accepted accounting principles and a thorough knowledge of the preparation as to form and content of the general purpose financial statements. The nature, importance, recording procedures and presentation of the following specific balance sheet accounts are systematically examined: cash, accounts receivable, marketable securities, inventories and accounts payable. Due to the complexities of this course, four classroom hours are required to present the material. PREREQUISITE: BA 210.

*Offered Fall and Spring Semesters*

### **BA 311 — COST ACCOUNTING**

3 credits

This course provides an overview of the nature and purposes of cost accounting. Topics covered include cost concepts, manufacturing financial statements, job cost and process cost accumulation methods, material labor and overhead planning and control procedures, standard cost accounting system, master budgeting, and methods of variance analysis are examined. Due to the complexities of this course, four classroom hours are required to present the material. PREREQUISITE: BA 210.

*Offered Fall Semester*

### **BA 312 — MANAGERIAL ACCOUNTING**

3 credits

An introduction to the internal uses of accounting for management planning and control. The point of view will be on the use rather than the construction of accounting data. Areas of study include cost concepts and techniques, cost-volume-profit analysis, segmented



statements, direct costing, master budgeting, standard costing, and relevant cost analysis. In addition, one hour a week will be spent in a microcomputer laboratory completing managerial problems using Lotus 1-2-3 techniques. PREREQUISITE: BA 210.

*Offered Fall Semester*

### **BA 313 — INTRO. TO FEDERAL INCOME TAXES**

3 credits

This course presents a comprehensive explanation of the Federal structure and the accepted practice used in applying tax principles in specific areas as they relate to the preparation of returns involving individuals; Massachusetts income taxes as they affect individuals are also reviewed. PREREQUISITE: BA 210.

*Offered Spring Semester*

### **BA 314 — SMALL BUSINESS PLANNING AND CONTROL**

3 credits

This course covers the techniques of accounting and financial analysis applicable to the following topics: credit and collection, cash budgeting, cash flow projections, and relevant cost analysis. In addition, the student will learn to evaluate different sources and costs of obtaining capital. PREREQUISITE: BA 110 or BA 111.

*Offered Fall Semester*

### **BA 410 — INTERMEDIATE ACCOUNTING 2**

3 credits

This course provides a further examination of the nature, importance, recording procedures and presentation of balance sheet items initiated in Intermediate 1. The areas of plant assets, long term liabilities, investments, and corporation equity accounts are all covered in detail. Specialized accounting methods for pensions, leases and price level adjustments are examined. Time permitting, the funds flow statements and special error correction techniques will be covered. Due to the complexities of this course, four classroom hours are required to present the material. PREREQUISITE: BA 310.

*Offered Fall and Spring Semesters*

### **BA 417 — GOVERNMENTAL AND FUND ACCOUNTING**

3 credits

Specialized area of accounting developed in answer to the specialized needs of non-profit organizations. Covers principles of fund accounting as applied to governmental institutions and hospitals. Particular emphasis on accounting for municipal governments. PREREQUISITE: BA 210.

*Offered Continuing Education*

### **BA 418 — AUDITING**

3 credits

A study of the philosophy, objectives, and working procedures involved in the auditing process. The course is designed to familiarize the student with the professional ethics, generally accepted auditing standards, auditing procedures, auditor's legal liabilities, and the rendering of an audit report. The course will also focus on the examination of the financial statements, development of audit programs, generally accepted auditing procedures, review of internal control systems, and internal audit procedures. The significance of audit results to various interested parties will also be examined. PREREQUISITE: BA 410.

*Offered Spring Semester*

### **BP 101 — OFFICE ACCOUNTING 1**

3 credits

An introductory course covering the basic structure, concepts and principles of accounting. Emphasis is placed upon the daily record keeping, classification and summarization of the financial information which flows within a business enterprise. The accounting cycle including statement presentation is examined along with such areas as cash, receivables, payables, payroll and taxes. A practice set is assigned and completion of it required. (This course is restricted to the office administration, or technology students.) Transfer students should be taking BA 110.

*Offered Fall and Spring Semesters*



## BUSINESS ADMINISTRATION

### **BP 106 — MEDICAL ASSISTANT RECORDKEEPING**

1 credit

This course is designed to introduce the medical assistant to the basics of medical office recordkeeping. A brief survey of the methods and procedures of billing, banking, and book-keeping will be presented.

*Offered Spring Semester*

Courses will be offered subject to sufficient enrollment.

## FINANCE

### **BF 110 — INTRODUCTION TO FINANCE**

3 credits

This course is designed to acquaint the student with the manner in which the financial system functions and with the techniques used to reach financial decisions. Major topics to be studied include the nature of money and financial institutions, central banking, securities markets, managing and financing of organizational assets. Special emphasis is given to financial decision-making.

*Offered Fall and Spring Semesters*

### **BF 310 — MONEY AND BANKING**

3 credits

The changing nature and functions of money are studied in considerable detail. The role of the banking system as a creator of money and credit is analyzed. The course includes an extensive study of non-bank financial intermediaries. A macroeconomic model is developed within which the relative efficiency of monetary and fiscal policy is examined. **PREREQUISITE:** BF 110.

*Offered Fall Semester*

### **BF 313 — PERSONAL FINANCIAL PLANNING**

3 credits

This course is designed to provide the student with an analysis of the various components making up the financial plan. From this basis, the various products available are examined in depth. These include the various types of insurance including life, accident and health, property, liability and disability income. Annuities are also included within this section. In addition, various investments available are discussed. These include savings, stocks, bonds, mutual funds, tax-sheltered investments and commodities. Interwoven throughout these discussions is the potential impact these investments have on an individual's federal income tax. The last major areas to be investigated are those of estate analysis and retirement planning. Alternative ways of handling these areas are presented and discussed.

*Offered Continuing Education*

### **BF 410 — INVESTMENTS**

3 credits

This is a beginning course in investment management with special emphasis on the principles governing individual and institutional investment programs. Topics covered include the mechanics of investment, investment media, securities analysis and portfolio management. **PREREQUISITE:** BF 110.

*Offered Spring Semester*

### **BF 411 — MANAGERIAL FINANCE**

3 credits

The principle focus of Managerial Finance is on decisions and actions that are undertaken in light of the firm's objectives. Certain key concepts and commonly used tools of financial analysis are developed. Included are such topics as ratio analysis, sources and the use of funds analysis and financial control techniques. This material provides a useful overview of finance, and the ideas and terminology developed here facilitate an understanding of all the other parts of the course. Topics to be covered include decisions involving working capital, long-term assets, sources and forms of long-term financing, financial structure and leverage and cost of capital calculations. **PREREQUISITES:** BF 110, BA 210.

*Offered Spring Semester*

Courses will be offered subject to sufficient enrollment.

## BUSINESS LAW

### **BB 310 — BUSINESS LAW 1**

3 credits

The primary purpose of a course in business law is to develop an understanding of the legal framework of business — the basic principles of law that apply to business transactions. Since the students of the course are not seeking training as lawyers, preventive law becomes an important objective. Emphasis is spent on contracts, agency, and employment. **PREREQUISITE:** LE 100.

*Offered Fall and Spring Semesters*

### **BB 311 — BASIC LEGAL CONCEPTS**

1 credit

The course content is designed to acquaint medical personnel with various legal aspects germane to their profession, and with applying these principles to medical situations.

*Offered Fall and Spring Semesters*

### **BB 410 — BUSINESS LAW 2**

3 credits

The purpose outlined in Business Law 1 is continued with emphasis upon personal property, bailments, the Law of Sales, commercial paper such as promissory notes, drafts and checks, real property arrangements such as Landlord & Tenant, Leases, Wills and Intestacy. **PREREQUISITE:** BB 310.

*Offered Fall and Spring Semesters*

### **BB 412 — SMALL BUSINESS LAW AND INSURANCE**

3 credits

This course is designed to familiarize the small business owner or his other professional staff with legal rights and responsibilities. Included is a realistic approach to the laws that affect your business, including the code and government regulations. In addition, we will explore the various forms of legal organization. Lastly, basic knowledge in insurance and tax liabilities is pursued.

*Offered Fall Semester*

### **BB 413 — REAL ESTATE LAW**

3 credits

This course aims to acquaint the participant with the legal processes and instruments involved in real estate transactions; it does not attempt to supplant the services of the attorney. Included are titles, easements, deeds, contracts, agreements of sale, mortgages, foreclosures and redemptions, liens, wills and probate, tenant and landlord relations, leases and conveyancing. Public aspects of real estate business, such as construction and zoning laws, taxes and insurance are considered.

*Offered Continuing Education*

### **BP 312 — MEDICAL LAW FOR HEALTH PERSONNEL**

3 credits

This course will cover the relationship between the Law and Society as primarily applicable to the practice of medicine. Discussions will cover the sources and type of law, authority and liability of medical and paramedical personnel and their licensure and registration. Medical ethics, confidentiality, insurance, informed consent and negligence will be considered along with torts, contracts and crimes.

*Offered Spring Semester*

Courses will be offered subject to sufficient enrollment.

## MANAGEMENT

### **BK 110 — PRINCIPLES OF MANAGEMENT**

3 credits

This course provides the student with an introduction to the art and sciences of management. A detailed analysis is made of the planning, organizing, leading, and controlling functions. Particular emphasis is placed upon the decision-making process.

*Offered Fall and Spring Semesters*

# BUSINESS ADMINISTRATION

## **BK 112 — MANAGERIAL SUPERVISION**

3 credits

This course examines the unique role of the first-level manager and the skills essential to effective performance. Because supervisors deal primarily with immediate subordinates, emphasis is placed on interpersonal skills and relationships, particularly motivation, performance reviews, and conflict management.

*Offered Fall and Spring Semesters*

## **BK 310 — PERSONNEL MANAGEMENT**

3 credits

The primary aim of a course in personnel management is to provide an understanding of the role of the personnel department in the development and administration of the personnel program and the processes relating to it. Areas of study include the basic functions relating to the recruitment, selection, training, motivation, and remuneration of employees. PREREQUISITE: BK 110.

*Offered Fall Semester*

## **BK 312 — WOMEN, MANAGEMENT, AND LEADERSHIP**

3 credits

This course is designed to prepare women to be effective participants and leaders in organizational settings. Students will examine the "holistic leadership model for women" to develop an understanding of the interactional effects among societal, organizational, and self norms and expectations of our leadership in organizations. Objectives of the course are: 1) to develop an appreciation of the role of cultural differences in our ability to be effective leaders; 2) to increase our understanding of our own leadership styles through the assessment of our attitudes, values, and organization; 3) to develop confidence in our styles of leadership as women, and to develop strategies for the effective application of our styles to organizational settings; and 4) to increase our knowledge of leadership theory as well as to critique the theory in terms of its relevance to women's experience in organizations. PREREQUISITE: BK 110 or BK 112.

*Offered Fall and Spring Semesters*

## **BK 410 — LABOR RELATIONS**

3 credits

This course is designed to expose the student to the philosophy, activities and objectives of the American labor movement. Areas of analysis include the history of unionism, labor legislation and the search for institutional security. Particular emphasis is given to the nature, content, negotiation, and administration of a collective bargaining agreement. PREREQUISITE: BK 110.

*Offered Spring Semester*

## **BK 411 — PRODUCTION MANAGEMENT**

3 credits

This is a practical course emphasizing the organization and operation of the production system. Included are capital utilization, work measurement and methods analysis, cost, quality and production control, job evaluation and wage incentive systems. Consideration is given to the quantitative aspects of modern management and their value to the executive. PREREQUISITE: BK 110.

*Offered Spring Semester*

## **BK 417 — PURCHASING**

3 credits

This course is designed to introduce the student to the world of modern purchasing. An overview of purchasing management and organization along with policies and procedures is presented. The basic legal aspects of purchasing, purchasing ethics, sources of supply and value analysis are explored and presented for class discussion. Modern methods of purchasing are reviewed. PREREQUISITE: BK 110.

*Offered Continuing Education*

## **BK 419 — OFFICE MANAGEMENT AND CONTROL**

3 credits

This course exposes the student to the problems of the Office Manager, including the major ideas of what has to be done, how it is going to be done, and who is going to do it. In addition, a study of the control procedures on information and personnel is reviewed. PREREQUISITE: BK 110.

*Offered Continuing Education*



## **BK 420 — SMALL BUSINESS MANAGEMENT**

3 credits

This course is designed to expose the student to the challenges of starting, operating and evaluating the effectiveness of the small business. Topics covered include the various forms of organization, financing, cost structure, location, sources of personnel, marketing and completion. **PREREQUISITES:** BA 210, BK 110.

*Offered Spring Semester*

## **BK 421 — SMALL BUSINESS FORMATION**

3 credits

This course is designed to expose the non-business student to a practical discussion of the principles and problems of owning and operating a small business. The course will provide a step-by-step, no-nonsense, "how to" approach in establishing a new business, as well as examining the basic operating problems faced by the small business manager in an ongoing enterprise. The main objective of the course is to help the non-business student avoid some of the pitfalls of starting and operating a small business. **PREREQUISITES:** None (This course is restricted to the non-business student.)

*Offered Spring Semester*

## **BK 427 — ORGANIZATIONAL BEHAVIOR**

3 credits

This course examines the underlying sources, processes, and consequences of human behavior in organizations. The principles of contemporary behavioral science are used to analyze, understand, predict, and control that behavior. Since organizational behavior is viewed as the result of the interaction of individuals, groups, and of the organization itself, the human element is emphasized in the analysis of organizational design and management. **PREREQUISITES:** BK 110, and NS 100 or NP 100.

*Offered Spring Semester*

Courses will be offered subject to sufficient enrollment.

# GENERAL BUSINESS

## **BP 110 — PRINCIPLES OF REAL ESTATE**

3 credits

This course covers the basic laws and principles of Massachusetts Real Estate. It touches upon legal processes and instruments involved in real estate operation, titles, deeds, mortgages, liens, contracts and leases. It gives understanding, background and terminology necessary for advanced study in specialized courses. This could well assist those preparing for the license examination.

*Offered Continuing Education*

## **BP 111 — PRINCIPLES OF INSURANCE**

3 credits

The historical background, and developing and understanding the basic principles of insurance as well as the nature and operation of the insurance business. Emphasis given to the principles which underlie the entire field of insurance. Understanding is developed in the fundamental areas of indemnity, insurable interest, co-insurance, subrogation, proximate cause, other insurance, risk, requisites of insurable risk, deductibles, valued policies, probability and many others. The important functional areas of rating, underwriting, marketing and adjusting are considered as well as the subjects of regulation, reinsurance and company organization. The power and functions of insurance agents and brokers.

*Offered Continuing Education*

## **BP 115 — INTRODUCTION TO BUSINESS**

3 credits

The purpose of this course is to provide the non-business student with a general overview of business. The course is designed to acquaint the student with the basic departmental functions of business, emphasizing the manufacturing, financial, sales/marketing and management information system areas. A further examination will be conducted stressing the interrelationships between these vital operating departments and the contributions that each provides towards the successful operation of the business. Close attention will be paid to the interdependence and competitive spirit, as well as the unique problems facing each segment.

*Offered Fall and Spring Semesters*

## BUSINESS ADMINISTRATION

### **BP 120 — TECHNOLOGY, CULTURE, AND COMMERCE**

3 credits

This course will explore technology in an attempt to both understand (in simple terms) various forms of technology, and to explore ways in which technology impacts individuals, cultures, and commerce. The use of multimedia (video/audio/computer presentation/simple animation) will assist in giving an overview of the different kinds of technology and how they are interconnected — and how all of this has interacted to form the highly technical world in which we live. Additionally, there will be a focus on the future of technology, both for humanity in general, and in terms of the business world and of individual career opportunities in the next decade and century.

*Offered Fall and Spring Semesters*

### **BP 331 — RESIDENTIAL APPRAISAL**

3 credits

This course covers the fundamentals of appraising as applied to residential properties. Included are purposes of appraisals, varying concepts of valuation, acquisition of data used for appraisals covering tables, techniques, special factors and final estimates. Writing of reports and preparation of expert testimony. PREREQUISITE: BP 110.

*Offered Continuing Education*

### **BP 332 — COMMERCIAL & INDUSTRIAL APPRAISAL**

3 credits

The principles covered in Residential Appraisal are applied to commercial and industrial properties. An analysis of business neighborhoods covering apartment buildings and hotels as well as all types of industrial and manufacturing properties is made. PREREQUISITE: BP 331.

*Offered Continuing Education*

### **BP 333 — REAL ESTATE INVESTMENTS & FINANCING**

3 credits

Various opportunities and inherent problems in the investment in real estate are reviewed. In addition, the fundamentals of financing real estate are covered. Included are instruments of finance, particular applications to leases, bond issues, mortgage lending and income tax effects as a factor. Competing agencies of federal financing organizations and real estate brokers are reviewed. PREREQUISITES: BP 111, BF 110.

*Offered Continuing Education*

### **BP 334 — REAL ESTATE MANAGEMENT**

3 credits

This course covers the real estate operator's functions in exchange and speculation in properties, financing and developing, whether he is running his own business or a department in a brokerage firm. Problems inherent in managing apartments and cooperative apartments are reviewed. PREREQUISITE: BP 110.

*Offered Continuing Education*

### **BP 341 — SMALL BUSINESS PERSONNEL MANAGEMENT**

3 credits

The central theme of this course is the personnel responsibility and function of the small business manager. Full attention is devoted to the traditional personnel topics and functions, including personnel policies; employee selection; training; labor relations; pay and benefits administration; employment laws; and health and safety.

*Offered Fall Semester*

### **BP 342 — SMALL BUSINESS PRACTICUM**

3 credits

The student applies knowledge obtained in previous courses to a real business situation. This is done by assigning a small group of students to a new or existing business that is in need of management consultation in the various problematic aspects of the business, including technical assistance in the development of a loan proposal, financial projections, and business planning. This course provides the student with the same valuable experience that Co-op offers the student in other academic disciplines. PREREQUISITE: Should be taken after all other required small business courses.

*Offered Spring Semester*

Courses will be offered subject to sufficient enrollment.

## MARKETING

**BI 110 — PRINCIPLES OF MARKETING**

3 credits

This course emphasizes a well-rounded basic approach that provides maximum exposure to the role of marketing in today's economy which is a marketing economy — not just for marketers of conventional products and services, but also for government, social institutions and social causes and the professions. To achieve this exposure, an overview is presented of the marketing process including marketing research, consumer behavior, market segmentation, target consumers, product strategy, packaging, branding, pricing and the promotional mix. The course will service two types of students — those who want a knowledge of marketing fundamentals, principles and activities to meet specific personal or professional needs, and those who plan a career in marketing.

*Offered Fall and Spring Semesters***BP 112 — SMALL BUSINESS MARKETING**

3 credits

The various aspects of the marketing function tailored to the small business organization are presented in this course. The course is designed to teach students pricing and profit policies, sales techniques, sales forecasting, and territorial structuring. In addition, marketing research methodologies and resources will be addressed.

*Offered Spring Semester***BI 310 — RETAILING**

3 credits

The major goals of the course are to enable the student to become a good retail planner and decision maker and to help focus on change and adaptation to change. The student will be introduced to the technical knowledge necessary for retail management. An overview of retailing is presented, including such vital areas as organizational structure, physical security, consumer behavior, personnel management, marketing research, merchandising, planning promotional activities, store planning and inventory control. PREREQUISITE: BI 110.

*Offered Fall Semester***BI 311 — ADVERTISING AND PROMOTION**

3 credits

This course is designed to teach students advertising's fundamental principles and to familiarize them with its strategic, managerial, creative, and financial elements. The student will be exposed to developing advertising strategy, media strategy and selection, creative strategy and execution, budgeting, and control, utilizing the case study method where feasible. PREREQUISITE: BI 110.

*Offered Spring Semester***BI 312 — ADVERTISING PRINCIPLES**

3 credits

An introductory textbook will be used to cover the field of advertising as completely as possible. The course will not specifically take a business point of view or a marketing point of view, but instead, an advertising point of view. The course will include a variety of disciplines and specialties. Such things as research, media buying, print and broadcast production, sales promotion, product publicity, budgeting, scheduling, and even business presentations will be covered. The main purpose of the course is to introduce the non-business student to the richness and variety of the real world of advertising. (This course is restricted to the non-business student.)

*Offered Fall and Spring Semesters***BI 313 — CONSUMERISM**

3 credits

The development of an analytical structure within which the underlying issues facing the marketing profession are studied. The pre-purchase, purchase and post-purchase phases of a transaction receive detailed consideration in terms of the legal obligations of the buyer, the seller and the financier. Contemporary consumer concern with advertising, pricing and selling practices is examined along with legal requirements covering product safety, warranties, liability and consumer recourse. PREREQUISITE: BI 110.

*Offered Continuing Education*



## BUSINESS ADMINISTRATION

### **BI 410 — CONSUMER BEHAVIOR**

3 credits

The aim of this course is to understand why people buy as the foundation for developing concepts for meeting consumer needs through selling, advertising, distribution and related activities. Behavioral considerations affecting consumer purchase decisions are analyzed. These include the personality, motivational, cognitive and attitudinal aspects, along with the social influences which affect consumer interaction with business firms. **PREREQUISITE:** BI 110.

*Offered Fall Semester*

### **BI 411 — SALES AND SALES MANAGEMENT**

3 credits

This course will introduce the student to the fields of sales and sales management. A comprehensive coverage of the tasks of the sales manager as organizer, administrator, and decision maker will be provided in a systematic manner. The most contemporary concepts in sales management as well as the more traditional practices will be explored by integrating both theory and practice. The sales portion of the course will present the theories, concepts, techniques and processes involved in selling. **PREREQUISITE:** BI 110.

*Offered Spring Semester*

### **BI 412 — MERCHANDISING**

3 credits

A study of the principles and procedures used in selection, promotion and selling of hard and soft goods merchandise in retail stores to develop an understanding of the major considerations of buying, inventory control, pricing and consumer buying motives. **PREREQUISITE:** BI 310.

*Offered Periodically*

Courses will be offered subject to sufficient enrollment.

## Chemistry

### **MC 090 — MEASUREMENTS AND CALCULATIONS FOR THE PHYSICAL SCIENCES**

3 credits

This course is designed to prepare students to enter a first college-level course in physical science (i.e., College Chemistry, College Physics, Technical Physics, Chemistry 101.) The student will learn to read scales, approximate, use the metric system, analyze problems, identify significant figures, and design problem solutions using dimensional analysis. Two hours of lecture and two hours of laboratory per week. **PREREQUISITE:** Math placement of MM 081.

### **MC 100 — COLLEGE CHEMISTRY**

4 credits

A study of the fundamental principles of chemistry in relation to the properties, composition, and structure of matter. Topics include the atom, periodicity, bonding, stoichiometry, gases, and acid/base theory, with an emphasis on problem solving. For non-science majors. Three one-hour lectures per week, one three-hour lab. **PREREQUISITE:** Concurrent Math MM 091 and MM 093.

*Offered Fall and Spring Semesters*

### **MC 101 — SURVEY OF CHEMISTRY 1**

4 credits

A one-year college chemistry course for students majoring in the health sciences. The first semester is a study of the general principles of inorganic chemistry: atomic and molecular structure, concentration, dilution, stoichiometry, and descriptive chemistry. For students who do not wish to major in science or engineering. Three one-hour lectures and one three-hour lab per week. **PREREQUISITE:** Concurrent Math MM 091-093.

*Offered Fall Semester*

### **MC 103 — GENERAL CHEMISTRY 1**

4 credits

Modern theories of chemical reactions; atomic, electronic and molecular structures; states of matter; and chemical bonding are emphasized. Three one-hour lectures and one three-

hour lab per week. PREREQUISITE: One year of high school physical science and completion of MM 093 and 097.

*Offered Fall and Spring Semesters*

**MC 140 — SEMINARS IN APPLIED CHEMISTRY**

1 credit

This course is a series of lectures by invited chemists practicing in non-academic laboratories. Sponsored jointly with the Cooperating Colleges of Greater Springfield.

*Offered every other Spring Semester*

**MC 201 — SURVEY OF CHEMISTRY 2**

4 credits

A continuation of Survey of Chemistry 1. A study of the basic concepts of organic and biochemistry. Three one-hour lectures and one three-hour lab per week. PREREQUISITE: MC 101.

*Offered Spring Semester*

**MC 203 — GENERAL CHEMISTRY 2**

4 credits

A continuation of MC 103. A study of equilibria, solution, kinetics, thermodynamics, acid/base and redox reactions. Three one-hour lectures and one three-hour lab per week. PREREQUISITE: Completion of MC 103.

*Offered Fall and Spring Semesters*

**MC 205 — CHEMISTRY OF LITHOGRAPHY 2**

4 credits

Topics in chemistry relating to the graphic arts including photography and photographic processes, colors, inks and printing. Laboratory.

*Offered Spring Semester*

**MC 319 — ORGANIC CHEMISTRY 1**

3 credits

First semester of a one year organic chemistry course at the university level. This is the same course as MC 320 without the lab. Three one hour lectures per week. PREREQUISITE: MC 203 or permission of instructor.

**MC 320 — ORGANIC CHEMISTRY 1**

4 credits

A one-year course in organic chemistry at the university level. Reaction, synthesis and mechanism of organic reactions will be studied. This course is designed for transfer students with majors in chemistry, biology, pre-med or pre-dental. Three three-hour lectures per week, one three-hour lab per week. PREREQUISITE: Chemistry MC 203 or permission of instructor.

*Offered Fall Semester*

**MC 340 — INSTRUMENTAL ANALYSIS**

3 credits

The theory and practice of modern analytical methods will be discussed. Emphasis will be placed on spectroscopic, chromatographic, total organic carbon and atomic absorption techniques. The lab will include selected experiments in air and water analysis having relevance to environmental and industrial situations. Two class hours and three lab hours each week. PREREQUISITE: MC 201 or permission of instructor.

**MC 350 — INSTRUMENTAL ANALYSIS**

4 credits

The theory and practice of modern analytical methods utilizing spectroscopic, chromatographic and colorimetric techniques will be stressed. The laboratory will include selected experiments having clinical and industrial relevance. PREREQUISITES: General Chemistry MC 203 or MC 201 or permission of instructor.

*Offered Fall Semester*

**MC 370 — INDEPENDENT CHEMISTRY STUDY 1**

1, 2, 3, or 4 crs.

Independent study of laboratory project in Chemistry under direction of an instructor. PREREQUISITE: Permission of Department Chairperson.

*Offered Fall and Spring Semesters*

**MC 419 — ORGANIC CHEMISTRY 2**

3 credits

Second semester of a one-year organic chemistry course at the university level. This is a continuance of MC 319. Three one-hour lectures per week.

## CHEMISTRY

### **MC 420 — ORGANIC CHEMISTRY 2**

4 credits

A continuation of Organic Chemistry MC 320.

*Offered Spring Semester*

### **MC 470 — INDEPENDENT CHEMISTRY STUDY 2**

1, 2, 3, or 4 crs.

A continuation of MC 370. **PREREQUISITE:** MC 370 or permission of Department Chairperson.

*Offered Fall and Spring Semesters*

## Civil Engineering Technology

### **GC 105 — CIVIL ENGINEERING SEMINAR**

1 credit

An overview of Civil Engineering Technology is presented by lectures and visiting professionals covering the relationship of architect, engineer, and contractor. Aspects of structures, highways, environmental engineering, surveying, laboratory analysis, and municipal engineering are included. The role of the civil engineering technologist in today's society is presented covering career growth opportunities, ethics, the role of professional societies, necessary skills and background, and continuing education.

*Offered Fall Semester*

### **GC 115 — CONSTRUCTION MATERIALS AND METHODS**

3 credits

A survey of common materials and methods used in building construction and site preparation is presented. Materials covered include wood, steel, concrete, glass, bituminous, and insulation. Emphasis is placed on their physical properties, use in construction, and construction techniques for completing the project. Methods related to site operations, concrete placement, and productivity of earthwork equipment are included. Three lecture hours. **PREREQUISITES:** MM 087 and LD 099.

*Offered Fall Semester*

### **GC 120 — ARCHITECTURAL DESIGN & SPECIFICATIONS 1**

4 credits

An introduction to architectural and construction graphic techniques and written specifications. Emphasis is on residential and light commercial structures including site planning, floor plans, elevations, sections, isometrics, mechanical and electrical drawings and specifications, and blueprint readings. Two lecture and six lab hours.

*Offered Fall Semester*

### **GC 220 — CONSTRUCTION ESTIMATING**

3 credits

An introduction to estimating and construction office practice to familiarize the student with the construction process as a whole; the ways in which contractors organize their offices to accomplish jobs in construction; the generation of plans and specifications and their use, systems of accounting; and how material quantity "take-off" forms the basis for accounting. Two lecture hours and three laboratory hours.

*Offered Spring Semester*

### **GC 235 — HYDRAULICS AND HYDROLOGY**

3 credits

Concepts of continuity, energy, and hydrostatic pressure are included. Pumping systems are designed. Basic hydrological principles of rainfall, runoff, and infiltration are discussed as part of sizing storm drainage system components. A computerized runoff model is introduced. Wetland identification, protection, and remediation are discussed along with the role of regulatory commissions/agencies. The laboratory is devoted to design and problem solving. Two lecture hours and three laboratory hours. **PREREQUISITE:** MM 087 concurrently.

*Offered Spring Semester*

### **GC 310 — SURVEYING**

4 credits

The theory and practice of construction surveying. Field practice is given in the use of tape, transit, level, theodolite, and electronic distance measuring (EDM) equipment. This is a laboratory-oriented course encompassing baseline, differential, and profile leveling, establishment of contours, traverse closures, stadia, construction stakeout of buildings and pipeline



layout. Techniques of preparing working plans and maps from recorded data are developed. Two lecture hours and six laboratory hours.

*Offered Fall Semester*

## **GC 320 — SOILS & FOUNDATIONS**

3 credits

Analysis of subsoil conditions, bearing capacity and settlement analysis, character of natural soil deposits, earth pressure and retaining wall theory, stability of slopes and subgrades, foundation types and construction methods, and structural design of foundation elements. Three lecture hours.

*Offered Fall Semester*

## **GC 345 — STATICS AND STRENGTH OF MATERIALS**

4 credits

An introduction to stress and force theories as they apply to the equilibrium of rigid bodies and particles. Principles of resultant forces, free body diagrams, tension and compression members, truss analysis, applied forces to beams and columns, shear and bending moment diagrams, frictional forces, and torsion are studied. Additional topics include stress and strain, mechanical properties of engineering materials, factors of safety, centroids, moments of inertia, and welded and bolted connections. The weekly three-hour lab is devoted to in-depth problem analysis and solutions that expand and demonstrate the practical applications of classroom theories. Three lecture hours and three lab hours each week. PREREQUISITE: MM 132.

*Offered Fall Semester*

## **GC 410 — REINFORCED CONCRETE ANALYSIS**

3 credits

A continuation of the stress and force theories from Statics as they apply to structural design using reinforced concrete. The course includes proportioning and specifying batch constituents, and the design of singly reinforced beams, slabs and foundation systems in accordance with the ACI Code and formwork considerations. Retaining walls are evaluated, and standard ASTM concrete tests are conducted by the students. Transporting, placing, and curing of concrete is discussed. The weekly 3-hour laboratory is devoted to design analysis, concrete testing, and preparation of design drawings. Two lecture hours and three laboratory hours. PREREQUISITE: GC 340.

*Offered Spring Semester*

## **GC 420 — CONSTRUCTION MANAGEMENT**

3 credits

A study of specialized business and management topics which are of particular interest to the construction industry. Topics include basic operational patterns, subcontracting procedures, purchasing and expediting, scheduling, change orders, accounting for materials and supplies, field labor methods, critical path method and legal matters. Three lecture hours.

*Offered Spring Semester*

## **GC 430 — TRANSPORTATION ENGINEERING**

3 credits

Highway design, layout, construction, foundations, and subgrades are discussed. Flexible and rigid pavements are included, and selected topics in airport design are covered. The weekly three-hour laboratory includes design, curve layout, and earthwork computations. Field surveying for baseline profiles, cross sectioning, slope stakes and curve layout is also included in the laboratory. Two lecture hours and three laboratory hours. PREREQUISITE: GC 310.

*Offered Spring Semester*

## **GC 445 — STRUCTURES**

4 credits

A continuation of the stress and force theories from GC 345 Statics is presented as they apply to structural design. The design of structural steel floor, beam, and column systems is studied in depth, utilizing ASIC codes, with particular emphasis placed on shearing, bending, and deflection induced on wood and steel load-carrying members. The weekly three-hour lab is devoted to practical design procedures and analysis of various structural members, especially beams, girders, columns, bearing plates, and connections. Three lecture hours and three lab hours. PREREQUISITE: GC 345.

*Offered Spring Semester*

## **GC 455 — CIVIL ENGINEERING MATERIALS TESTING**

3 credits

Classroom theories in soil mechanics, structures, and concrete are expanded through materials testing experiments. Basic civil engineering soil tests are conducted. Soil and ground water testing techniques related to environmental studies and site remediation are discussed during lectures. Data analysis and presentation techniques are presented. Detailed lab reports are required. Training is provided for the Massachusetts Class A Concrete Field Technician Certification. A trip to an environmental laboratory or construction site is required. Two lecture hours and three lab hours. **PREREQUISITES:** GC 320 and GC 345.

*Offered Spring Semester*

## **Clerical Office Assistant (See Office Administration)**

## **Clinical Laboratory Science**

### **AL 102 — INTRODUCTION TO THE CLINICAL LAB**

5 credits

An overview and introduction to laboratory safety and basic skills as used in phlebotomy, urinalysis, hematology, chemistry, serology, immunochemistry, and microbiology. Safety, waste management, and OSHA regulations as well as universal precautions and proper procedures in regard to specimen processing will be taught to the student. Laboratory mathematics, quality control, and the proper use of instrumentation will be presented as used in the hospital, physician's office laboratory, and laboratory science area.

*Offered Fall Semester*

### **AL 210 — MEDICAL MICROBIOLOGY**

6 credits

This is a comprehensive study of both theory and the practical aspects of clinical microbiology. Emphasis will be placed on isolation and identification of bacteria that are pathogenic to man. The course will also include antimicrobial chemotherapy and host resistance. The course will cover the study of fungi and parasites as related to man, and identification techniques. Areas covered will be bacteriology, parasitology, and mycology. Basic microbiological identification, specimen handling, and laboratory procedures will be emphasized. **PREREQUISITE:** AL 102.

*Offered Spring Semester*

### **AL 300 — HEMATOLOGY AND COAGULATION**

4 credits

The study of blood in health and disease to include genetics, the origin, development and function of human blood cells, and a review of the vasculature and coagulation systems. Normal and abnormal findings will be studied through manual and automated procedures. Specific topics include: CBC and coagulation profile, normal values, quality control, and blood disorders. **PREREQUISITE:** AL 102.

*Offered Fall Semester*

### **AL 302 — CLINICAL CHEMISTRY**

4 credits

This course is designed to acquaint the student with the theory and function of the clinical chemistry laboratory. Course of study includes analysis of blood and body fluid in routine and emergency testing in the clinical chemistry lab. Testing using manual and automated procedures is stressed as well as preparation of solution, interpretation of procedures, and analyses of results. **PREREQUISITE:** AL 102.

*Offered Fall Semester*

### **AL 407 — BASIC LAB PROCEDURES FOR THE MEDICAL ASSISTANT**

3 credits

This course is designed to provide the medical assistant with the basic clinical laboratory skills required to work in a physician's office. Skills include: phlebotomy, quality control, urinalysis, and the basics of hematology, chemistry, serology, and microbiology. Universal

## COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

precautions, laboratory safety, and proper procedures regarding specimen processing will be taught.

*Offered Fall Semester*

### **AL 408 — CLINICAL IMMUNOLOGY/IMMUNOHEMATOLOGY**

5 credits

A study of the nature of the immune system. Topics include the nature of immunity, antigens, antibodies, and immune response. Serological procedures will be presented, and their diagnostic significance emphasized. Red blood cell immunology as it relates to ABO/Rh typing procedures, compatibility testing, and antibody detection and identification will be presented, and the clinical significance of these techniques will be identified. Blood donors, component preparation, and transfusion practices will be required in addition to record keeping and quality control procedures. **PREREQUISITE:** AL 102, AL 300 or permission of instructor.

*Offered Spring Semester*

### **AL 409 — LABORATORY SKILLS IN NUCLEAR MEDICINE**

1 credit

Instruction in basic laboratory skills, including safety/biohazard precautions, pipetting and spectrophotometric techniques. Students will perform in-vitro labeling assays as RIA/EIA using monoclonal antibodies in test procedures. Specimen collection, labeling, handling, processing, and testing will be reviewed as well as quality control procedures used in immunoassays.

*Offered Spring Semester*

### **AL 420 — CLINICAL PRACTICUM 1**

1 credit

Supervised clinical experience is obtained in an affiliated laboratory under the supervision of a qualified medical technologist and pathologist. The rotation schedule provides experience in the following departments: Blood Bank, Chemistry, Hematology, Microbiology, Serology, and Urinalysis. **PREREQUISITES:** Successful completion of core curriculum with a minimum passing grade of "C", (75) in all Department courses, and 2.0 QPA.

*Offered Intersession*

### **AL 421 — CLINICAL PRACTICUM 2**

6 credits

Continuation of AL 420.

*Offered Spring Semester*

### **AL 422 — CLINICAL PRACTICUM 3**

3 credits

A continued practicum for students who have had prior work experience in the clinical laboratory and who can demonstrate achievement of planned competencies in AL 420/421 within this time frame. Approval of the Department Chairperson/CLS Medical Director is a prerequisite for registering for this course.

*Offered Summer Session*

## Computer-Aided Drafting and Design (See Mechanical Engineering Technology)

## Computer-Aided Manufacturing (See Mechanical Engineering Technology)

## Computer Information Systems/ Data Processing

### **BD 101 — COMPUTER CONCEPTS**

4 credits

This course provides the student with an understanding of computers and the roles they play in today's information society. Topics include computer processors, input and output devices, secondary storage, applications software, operating systems, program develop-



## COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

ment, and the development and importance of business information systems. The student will gain hands-on experience using an integrated software package incorporating common productivity tools. **PREREQUISITE:** None.

*Offered Fall and Spring Semesters*

### **BD 102 — RPG 2 AND 3**

4 credits

The RPG programming language is a highly flexible problem-solving language that provides programming solutions to a wide variety of data processing problems. RPG is the language of choice in many small- to medium-sized business computer installations. Students will write, enter, compile, and execute programs using STCC IBM AS/400 computer. Chapter 1 through Chapter 7 of the text, along with selected programming assignments will be covered. **PREREQUISITE:** None.

*Offered Fall Semester*

### **BD 105 — PASCAL**

4 credits

Pascal is a programming language specifically designed as a teaching tool to enable students to learn the fundamentals of structured programming. Students will be expected to design, code, debug, test, and document Pascal programs, beginning with short and simple applications and continuing with those of increasing complexity. **PREREQUISITE:** None.

*Offered Fall Semester*

### **BD 107 — BASIC**

4 credits

This course is designed to teach the proper and correct ways to design and write programs in the BASIC Computer Language. Emphasis will be on using only the three logic control structures found in structured programming: the sequence logic structure, the if-then-else logic structure, and the looping logic structure. The concepts taught in the course include basic input/output operations, basic arithmetic operations, accumulating and printing totals, comparing, array processing, searching and sorting. In addition, string/file processing and report generation. **COREQUISITE:** BD 101.

*Offered Fall Semester*

### **BD 192 — COMPUTER CONCEPTS FOR ALLIED HEALTH**

2 credits

This course is designed to provide students with a fundamental understanding of the role of computers with an emphasis on medical and health applications. Using these applications, students will be introduced to common productivity tools such as data base, spreadsheets, and word processing. Students will also be exposed to the fundamentals of programming in BASIC. This course meets weekly for one lecture period and one lab period. **PREREQUISITE:** None.

*Offered Fall and Spring Semesters*

### **BD 193 — COMPUTER CONCEPTS FOR HUMAN SERVICES**

2 credits

This course will cover the operation and use of microcomputers, with emphasis on the ways computers can be used in the Human Services field. Students will gain experience using disk operating systems, word processing, spreadsheets, and data base applications. This course meets weekly for one lecture period and one lab period. **PREREQUISITE:** None.

### **BD 195 — COMPUTER CONCEPTS FOR TECHNOLOGIES**

3 credits

This course introduces the student to computer systems with emphasis on the microcomputer. The variety, uses and purpose of computer hardware is included in this course. The student will also be exposed to the terminology encountered in computerized environments and will receive hands-on experience with computer software. **PREREQUISITE:** None.

### **BD 196 — COMPUTER CONCEPTS FOR THE ARTS AND SCIENCES**

3 credits

This course is designed for the student in a liberal arts program. Topics covered will include a fundamental understanding of computer hardware (input, output, processing, and storage), and software (systems, applications, and productivity); a practical study of common productivity software (word processing, spreadsheet, data base and graphics); and an understanding of the implications and effects of computers in our social order. **PREREQUISITE:** LE 100 concurrent or completed.

*Offered Spring Semester*

# COMPUTER INFORMATION SYSTEMS/DATA PROCESSING

## **BD 202 — ADVANCED RPG 2 AND 3**

4 credits

This course is a continuation of BD 102. Chapter 8 through 14 of the text will be completed. Interactive processing, screen format design, and screen design aid will be utilized by the students to complete assigned programming problems. Random record retrieval using keyed files (ISAM), indexed file updating, and RPG structured programming is a partial list of topics to be included in the curriculum. Programming assignments will be compiled and executed on the STCC IBM AS/400 computer. PREREQUISITE: BD 102.

*Offered Spring Semester*

## **BD 205 — ADVANCED PASCAL**

4 credits

This course will prepare the student for further study in Computer Information Systems or Computer Science. Areas such as multi-dimensional arrays, search and sorting algorithms, recursive calls, text processing, records, file organization and handling, and the pointer data type will be explored. PREREQUISITE: PASCAL BD 105.

*Offered Spring Semester*

## **BD 300 — MICROCOMPUTER APPLICATIONS**

3 credits

Microcomputers have had a profound impact on the business community. Companies of all sizes have been quick to capitalize on the increase in productivity from employees who are skilled in the use of microcomputers. With an installed base of tens of millions of IBM Personal Computers and compatibles, intense competition among software vendors has spawned software that is both easy to use and extremely powerful. Foremost among the productivity tools are word processors, spreadsheets, and database management systems. The objective of this course is to make the student proficient in the use of the personal computer. PREREQUISITE: None.

*Offered Fall and Spring Semesters*

## **BD 302 — COBOL 1**

4 credits

COBOL is a procedural-type language which has, over the past twenty years, been the most popular language for solving business problems. The course emphasizes structured programming techniques with its concentration on program design and program readability. The student will write and test a number of programs using the college computer. PREREQUISITE: BD 102 or BD 105 or BD 107.

*Offered Spring Semester*

## **BD 303 — C PROGRAMMING**

4 credits

This course will explore the C programming language. There will be a strong emphasis on the use of the C language in writing programs for business applications. Topics to be covered include: data types, variables, statement formats, interactive input and output, character and numeric string manipulation, looping constructs, single and multidimensional arrays, pointer variables, functions, and data files. The principles of good programming style and structure will be stressed. The class will meet for three class hours and two lab hours each week. PREREQUISITE: One of the following programming courses: BD 105 Pascal, BD 107 Basic, or BD 302 Cobol.

*Offered Spring Semester*

## **BD 313 — OPERATING SYSTEMS**

3 credits

This introductory course will emphasize the practical aspects of operating systems. The IBM Personal Computer Disk Operating System will be studied. Topics will include the basic internal and external commands, device names, redirection and piping, subdirectories and paths, device drivers, and batch files. PREREQUISITE: None.

*Offered Fall Semester*

## **BD 314 — DATABASE SYSTEMS**

3 credits

This introductory course will focus on using a database management system to solve business-oriented problems. dBASE and its enhancement products have become a major application development system for the IBM Personal Computer. Topics will include creating and modifying structures, memory variables, sorting, indexing, report and screen generation, and setting relations. PREREQUISITE: None. RECOMMENDED: BD 300 or BD 101.

*Offered Spring Semester*



## **BD 315 — ADVANCED SPREADSHEETS**

3 credits

The power of spreadsheets will be discussed with emphasis on programmed keystrokes (macros) in Lotus 1-2-3. The data menu will also be examined in detail using the sort, query, table, and fill commands. Additional time will be spent on the various functions which are built into the Lotus 1-2-3 software. Other spreadsheet software will also be compared with Lotus 1-2-3. This course will be built around several projects that will be assigned, and on a final project which the students will complete on their own. PREREQUISITE: BD 300.

*Offered Spring Semester.*

## **BD 320 — DESKTOP PUBLISHING**

3 credits

A comprehensive introduction to a powerful page composition program such as PageMaker. The student will have use of an IBM PS/2 microcomputer system and receive hands-on experience. The course will be heavily project-oriented. The student will be guided into producing increasingly complex publications, thus experiencing a variety of techniques and achieving self-sufficiency. Hardware and software concepts as well as terminology associated with desktop publishing will also be included in this course. PREREQUISITE: Familiarity with any word processor.

*Offered Fall and Spring Semesters*

## **BD 402 — COBOL 2**

4 credits

The objectives of the course are to extend the student's knowledge of the COBOL language, to reinforce the ideals of structured programming, and to learn and adopt good programming standards. The knowledge gained from the COBOL 1 course will be used as the foundation for this course. The student will be introduced to file handling and other advanced techniques commonly used in the commercial data processing field. PREREQUISITE: BD 314.

*Offered Fall Semester*

## **BD 410 — SYSTEMS ANALYSIS & DESIGN 2**

3 credits

The student will develop special business systems including the necessary computer programs. Course flexibility is utilized to meet current demands of the computer industry and its changing techniques. PREREQUISITES: BD 101 and BD 302.

*Offered Spring Semester*

## **BD 412 — NETWORKS AND COMMUNICATIONS**

3 credits

The primary emphasis of this introductory course will be on the NOVELL network operating system. The design, selection, installation, use, and administration of networks will be discussed. Exposure to other existing campus networks will be included. PREREQUISITE: BD 313.

*Offered Spring Semester*

# Computer Integrated Manufacturing (See Mechanical Engineering Technology)

## Computer Systems Engineering Technology

## **ED 241 — COMPUTER PROGRAMMING**

2 credits

In this course the student will learn the C language. After an introduction to the C environment, the concepts of data and input/output, operators, expressions and statements, and program flow control will be covered. Next, functions, arrays, pointers and structures, unions and bitfields will be studied. Finally, file input and output, and graphics programming will be introduced. The laboratory portion of this course will allow the student an opportunity to construct, run and test C programs on a PC. PREREQUISITE: ET 111 Intro to CAET, or permission of instructor.

*Offered Spring Semester*



# COMPUTER SYSTEMS ENGINEERING TECHNOLOGY

## **ED 333 — MACHINE AND ASSEMBLY LANGUAGE PROGRAMMING**

3 credits

The study of data representation and low-level programming for computer systems. The course involves programming 6502 eight-bit processors as well as 8088 and 68000 sixteen-bit processors. Topics include computer instruction sets, addressing modes, arithmetic operations, program structures, assemblers and linkers, input/output, and real-time programming. **PREREQUISITES:** Senior standing in ED or permission of instructor.

*Offered Fall Semester*

## **ED 340 — OPERATING SYSTEMS**

3 credits

This course covers basic operating system theory. Monitors, OS services, file systems, scheduling, memory management, virtual memory. Overview of real-time operating systems (VRTX, MTOS-UX). Effects of Graphical User Interfaces (GUI) such as MS Windows, OS/2, etc. System security, system tuning and configuration. **PREREQUISITE:** Senior standing in ED or permission of instructor.

*Offered Fall Semester*

## **ED 342 — EMBEDDED CONTROLLERS 1**

4 credits

This course is an extension of "Digital Systems." Standard discrete logic is being replaced by microcontrollers. The course covers the synthesis of discrete logic designs using microcontroller circuitry and programs, ROM-based firmware, programming and controllers on-board peripherals (ACIA, parallel ports, A/Ds) and general interfacing. The laboratory portion of the course includes 6811 asm and C programming as well as hardware construction to give the student practical experience in this area. **PREREQUISITE:** Senior standing in ED or permission of the instructor.

*Offered Fall Semester*

## **ED 343 — LINEAR CIRCUITS**

4 credits

This course presents material about the theory and operation of discrete solid state devices such as diodes and transistors. Biasing techniques and practical applications are emphasized. The next portion of the course covers the operational amplifier. Use of the Op-Amp as a building block type of circuit is covered in detail. The laboratory portion of the course allows the student to gain practical hands-on experience in the construction and troubleshooting of typical active circuits such as amplifiers and oscillators using linear integrated circuits. **PREREQUISITES:** ET 130 and ET 230 or ET 110, 115, 210 and 215.

## **ED 420 — MICROPROCESSOR THEORY**

3 credits

The microprocessor in digital control systems, the substitution of software for hardware in logic design and the interface of the microprocessor with external devices. Architectural features of current microprocessors such as the Intel 8085, 8088, and 8086 or the Motorola 68000 will be examined and a study of the device's applications will be undertaken. **PREREQUISITES:** Senior standing and ED 330, ED 350, and ET 340. Honors component available.

*Offered Spring Semester*

## **ED 440 — MICROPROCESSOR INTERFACING**

4 credits

This course deals with the hardware necessary to build microprocessor-based systems from basic building block components. Both theoretical and practical aspects of interfacing processor, memory, and input/output devices are discussed. Topics include grounding, shielding and system construction, interrupt circuitry, memory interfacing, direct memory access, bus systems, and interface components. The laboratory portion of the course will allow the student to gain practical hands-on experience with the programming, interfacing and application of the microprocessor/microcomputer to real world systems. **PREREQUISITE:** Senior standing in ED or permission of instructor.

*Offered Spring Semester*

## **ED 442 — EMBEDDED CONTROLLERS 2**

4 credits

This course is a continuation of Embedded Controllers 1. Basic control principles. Experiments includes sensors (temperature, encoders, position, etc.). Interfacing data communications (RS232, Centronics), A/D and D/A principles, automatic test methods (ATE). Sampling and aliasing. Digital Filtering and DSP (Digital Signal Processing). The laboratory

# COMPUTER SYSTEMS ENGINEERING TECHNOLOGY

portion of the course consists of a design project. **PREREQUISITE:** ED 342 Embedded Controllers 1 or permission of instructor.

*Offered Spring Semester*

## **ED 444 — COMPUTER NETWORKING**

3 credits

This course will introduce the student to the concepts of computer networking. Coverage will include the telephone system, modem theory, the OSI networking model and its various physical layers — Ethernet, Arcnet, and Token Ring. The second half of the course will present material about typical present-day network operating systems such as Novell, OSI and Arpanet. **PREREQUISITE:** Senior standing in ED or permission of instructor.

*Offered Spring Semester*

## **ED 451 — COMPUTER PERIPHERALS**

3 credits

Computer peripherals are studied in this course. Coverage includes magnetic and optical storage devices, ESDI and SCSI interfaces, hierarchical storage controllers, input/output devices such as printers and video displays, and computer integration topics using the PC, PC-AT and PS/2s as guides. **PREREQUISITE:** Senior standing in ED or permission of instructor.

*Offered Spring Semester*

## Computer Science Transfer Option to Engineering & Science Transfer

### **MK 103 — INTRODUCTION TO COMPUTER PROGRAMMING**

4 credits

This course provides a general understanding of the hardware and software which go into a computer system. Methods of problem solving and algorithm development will be discussed using Pascal. Extensive hands-on computer use that involves program design, coding, entry, and debugging will be required. Topics to be discussed include top-down design, procedures, functions, single-dimensioned array processing, control structures, scope rules, text file processing, and Baukus-Naur syntax specifications for the Pascal language. **PREREQUISITE:** Computer Science Transfer major or permission of instructor.

### **MK 203 — THE C PROGRAMMING LANGUAGE**

4 credits

This course assumes that the student has taken one semester of computer programming. The programming features of the C language are discussed with enough detail to apply them to solving problems in both computer science and engineering. The advanced topics that will be investigated include: recursive programming, C variable storage techniques, pointer variables, dynamic variables, simple data structures such as multidimensional arrays and linked lists, as well as internal searching and sorting algorithms. Principles of good programming style and structure are heavily stressed. The abstract data concept is introduced early in the course. **PREREQUISITE:** ME 108 or MK 103 or other computer programming course.

*Offered Spring Semester*

### **MK 320 — COMPUTER ORGANIZATION & DIGITAL LOGIC**

3 credits

Introduction to the analysis and design of combination and sequential logic using Boolean algebra, Karnaugh Maps, and register transfer techniques. Logic design with integrated circuits. Flip-flops, registers, memory, and input/output devices are among the devices to be discussed. **PREREQUISITES:** ME 103/ME 206/MK 103.

### **MK 401 — DATA STRUCTURES AND ALGORITHMS**

4 credits

Analysis of algorithms that manipulate information organized in structures such as lists, trees, and graphs. Simple, circular, multilinked lists. Stacks and queues. Balancing algorithms for tree structures. Advanced search/sort techniques, hashing methods. Data-base management system design using the techniques discussed. **PREREQUISITE:** MK 203.

# Cosmetology

## AC 112 — THE PROFESSIONAL COSMETOLOGIST

2 credits

An orientation to the profession of cosmetology, highlighting basic principles and concepts inherent in the study of cosmetology is presented. Topics include rules and regulations of the Massachusetts Board of Cosmetology, careers in cosmetology, professional image, physical presentation, personality development, people skills, effective communication, professional ethics, and application of these concepts in the student salon. COREQUISITES: AC 113, AC 114, and MB 146.

*Offered Fall Semester*

## AC 113 — COSMETOLOGY 1

8 credits

The student learns the techniques and procedures of scalp treatments, draping, shampooing, finger waving, pin curling and hair styling, together with blow drying and thermal irons. Styling for student competition is incorporated. Permanent waving is studied. Chemical relaxation techniques and hair coloring are introduced to prepare students for AC 213.

In the laboratory setting, mannequin heads are used for practice work under the direct supervision of a licensed instructor. Safety and sanitation practices as outlined by the Massachusetts Board of Registration of Cosmetology are integrated throughout the course. COREQUISITES: AC 112, AC 114, and MB 127.

*Offered Fall Semester*

## AC 114 — AESTHETICS 1

3 credits

This course is designed to assist students to develop knowledge and skill in basic techniques and procedures of manicuring, facials, and superfluous hair removal. Massage, nail disorders, and diseases are integrated. Principles of safety and sanitation inherent in each procedure are stressed. COREQUISITES: AC 112, AC 113, and MB 146.

*Offered Fall Semester*

## AC 213 — COSMETOLOGY 2

8 credits

This course is a continuation of AC 113. Hair cutting, permanent waving, chemical relaxation, and hair coloring are studied in depth. The artistry of artificial hair and braiding are introduced. A patron salon provides experiences for the students to practice their skills in cosmetology. PREREQUISITES: AC 112, AC 113, AC 114 and MB 127.

*Offered Spring Semester*

## AC 214 — AESTHETICS 2

2 credits

A continuation of AC 114 in which the student learns the application of makeup and color concepts. An introduction is given to the electrical currents used in facial massage. Practical experience is gained in the salon where students offer manicures and facials under the supervision of a licensed instructor. PREREQUISITES: AC 112, AC 113, AC 114 and MB 127.

*Offered Spring Semester*

## AC 215 — COSMETOLOGY 3

3 credits

A basic course dealing with the fundamental principles and techniques underlying the managerial process in small business management. Topics include the Massachusetts Board of Cosmetology rules and regulations, marketing, advertising, record keeping, merchandise control, salon practices, telephone techniques, personnel management, and business ethics. Professionals in the industry are introduced. They provide a realistic approach for the student to the field. PREREQUISITES: AC 112, AC 113, AC 114 and MB 127.

*Offered Spring Semester*



## Court Reporting

**BC 070 — MACHINE SHORTHAND SKILL BUILDING 1**

3 credits

This course is designed to reinforce the theory and skills developed in Machine Shorthand 1. Machine shorthand tapes will be assigned. This course will meet a minimum of 6 hours per week. A grade of "C" is required. PREREQUISITE: BC 102.

*Offered Winter Intersession***BC 090 — MACHINE SHORTHAND SKILL BUILDING 2**

3 credits

The course is designed to reinforce the theory and skill developed in Machine Shorthand 4. Machine shorthand tapes will be assigned. The speed goal of 200 WPM on Q&A will be emphasized. This course will meet a minimum of 6 hours per week. A grade of "C" or better is required. PREREQUISITE: BC 404.

*Offered Winter Intersession***BC 102 — MACHINE SHORTHAND 1**

6 credits

This course will enable the student to gain a mastery of the basic StenEd machine shorthand theory. Emphasis will be placed on stroking technique and vocabulary development through the reading and writing of shorthand. Machine shorthand tapes are used in the development of dictation speed and the reading of notes accurately. Speed requirements are: students must pass two speed tests at 60 WPM on general business correspondence with a minimum of 95% and 97% accuracy. This course meets 10 hours per week. A grade of "C" or better is required. PREREQUISITES: 50-60 WPM NET typing, placement in English Composition 1.

*Offered Fall Semester***BC 105 — COURT REPORTING EDITING**

3 credits

Court Reporting Editing is designed to assist the student in becoming a professional word-smith, especially in dealing with spontaneous speech, which is less organized than written speech. This course emphasizes the basic principles of punctuation, capitalization, number and abbreviation styles, proofreading, and editing as they apply to the verbatim English found in court and deposition transcripts. Achievement tests will be administered on completion of each area of emphasis. PREREQUISITE: LE 100.

*Offered Fall and Spring Semesters***BC 202 — MACHINE SHORTHAND 2**

6 credits

This course will enable the student to gain a mastery of advanced StenEd machine shorthand theory and to develop shorthand and transcription skill on unfamiliar material. The student will develop the ability to separate phonetically unfamiliar words according to machine shorthand theory and to write these words accurately in shorthand. Students must pass two tests at 80 and 100 WPM on Literary material with a minimum of 95% and 97% accuracy. The course meets 10 hours per week. A grade of "C" or better is required. PREREQUISITE: BC 102 and BC 070 or permission of instructor.

*Offered Spring Semester***BC 205 — COMPUTER-ASSISTED MACHINE SHORTHAND**

1 credit

This elective course is designed for students desiring computer-assisted instruction (CAI) in StenEd machine shorthand theory. Students will work with computer-assisted StenEd lessons using IBM Professional Computers and X-Scribe First-Cat steno machines for on-line interaction with computerized lessons. COREQUISITE: BC 102 or BC 202.

**BC 304 — MACHINE SHORTHAND 3**

6 credits

This course continues student mastery of advanced machine shorthand theory, and development of shorthand and transcription skills on unfamiliar material. The student continues to develop the ability to separate phonetically unfamiliar words according to machine shorthand theory, and to write these words accurately in shorthand. Students must pass two tests at 120 Literary, 140 Jury Charge, and 140 Q&A with 95% and 97% accuracy. The course meets 10 hours per week throughout the summer. A grade of "C" or better is required. PREREQUISITE: BC 202 or permission of the instructor.

*Offered Summer Intersession and some Fall Semesters*

**BC 310 — COMPUTER TRANSCRIPTION APPLICATIONS**

1 credit

This course presents an overview of computer-aided transcription as it relates to the court reporting profession. Following an introduction to the microcomputer and computerized steno machines, students will use specialized court reporting translation software and become familiar with writing, translating, creating and revising job dictionaries; and editing and printing of final transcripts with standard pages. This course meets for one class hour and a minimum of two lab hours per week. A grade of "C" or better is required. COREQUISITES: BC 404, BL 304.

*Offered Fall Semester***BC 311 — ADVANCED CAT APPLICATIONS**

1 credit

This elective course is a continuation of BC 310. In addition to continued dictionary development through CAT transcription, students work with real-time CAT applications and production of four-voice transcripts. This course meets for one class hour and a minimum of two lab hours per week. A grade of "C" or better is required. PREREQUISITE: BC 310; COREQUISITES: BC 405, BC 410, BC 504.

*Offered Spring Semester***BC 400 — MACHINE SHORTHAND APPLICATIONS 1**

3 credits

This elective speed seminar is available to all advanced machine shorthand students desiring additional formal speed development classes emphasizing new material speed development in the following areas: question and answer testimony, jury charge, and literary. Readback ability will also be emphasized. The speed range will be determined with each new group. This course will meet three hours per week and is often scheduled to merge with Machine Shorthand 4. PREREQUISITE: Must be working at advanced speeds.

*May be offered Day or Evening***BC 404 — MACHINE SHORTHAND 4**

6 credits

This course continues the presentation of advanced shorthand theory, emphasizes speed building, and reviews grammar and punctuation appropriate to legal transcripts. Students must pass two tests at 140 and 160 Literary, 160 and 180 Jury Charge, and 160 and 180 Q&A with a minimum of 95% and 97% accuracy. The course meets 10 hours per week. A grade of "C" or better is required. PREREQUISITE: BC 304; COREQUISITES: BC 400, BC 310.

*Offered Fall Semester and some Spring Semesters***BC 405 — MEDICAL DICTATION FOR COURT REPORTERS**

3 credits

This course will consist of medical dictation emphasizing timed and untimed question and answer and literary material. Assigned tape practice will range from 100-200 WPM. This material is generally drawn from specially prepared medical dictation texts and actual cases. Medical dictionaries for CAT will be developed through special CAT assignments. A grade of "C" or better is required. PREREQUISITE: BC 404; COREQUISITES: BC 311 and BC 410.

*Offered Spring Semester***BC 410 — COURT REPORTING TRANSCRIPTION & PROCEDURES**

4 credits

This course is designed to emphasize the role of the reporter in trials, depositions, and administrative hearings. Preparation of depositions/transcripts, marking exhibits, indexing and storing of notes, and reporting techniques will be stressed. The course will consist of lecture, discussion, demonstration, production exercises, videotapes, guest speakers, tests and quizzes. Skills developed in BC 105 and BC 310 will be applied to final-copy transcripts. Three- and four-voice testimony will be dictated while students assume the roles of official reporters. Students must produce at least ten (10) perfect pages of final copy transcript from simulated or actual deposition or courtroom setting in two (2) hours or less. NOTE: No credit will be given unless minimum standards are achieved. A grade of "C" or better is required. PREREQUISITES: BC 310, BC 404; COREQUISITES: BC 311, BC 405, BC 504.

*Offered Spring Semester***BC 413 — COURT REPORTING TECHNOLOGY/INTERNSHIP**

4 credits

This course is designed to familiarize students with the Massachusetts court system, and the transcript format for district and superior courts, as well as reporting techniques using



## COURT REPORTING

machine shorthand. Students must complete a minimum of 50 verified hours of actual writing time at actual court cases and depositions approved by the instructor, and must satisfactorily complete a minimum of 40 final copy transcript pages from internship testimony. A grade of "C" or better is required. **PREREQUISITE:** Qualification at 200 WPM Q&A with 97% accuracy; **COREQUISITES:** BC 504, BC 410.

*Offered Spring Semester*

### **BC 500 — MACHINE SHORTHAND APPLICATIONS 2**

3 credits

This elective speed seminar is a continuation of BC 400 and will offer continued formal speed development at higher speeds and on more difficult material. Readback ability will continue to be emphasized. This course will meet three hours per week, and is often scheduled to merge with Machine Shorthand 5 or 6. **PREREQUISITE:** Must be working at RPR speeds.

*May be offered Day or Evening*

### **BC 504 — MACHINE SHORTHAND 5**

6 credits

This course is a continuation of BC 404, emphasizing speed and accuracy. Students will be required to transcribe verbatim with a minimum of 95% accuracy on advanced dictation of jury charges, literary selections, and multi-voice question and answer testimony. Students will be trained under simulated conditions in preparation for the Massachusetts Certified Shorthand Reporters Examination and the National Court Reporters Association Registered Professional Reporter Examination. Included are a review of specialized material in the areas of legal, technical, and sustained dictation. Students must pass two tests at 180 Literary, 200 Jury Charge, and 225 Q&A with a minimum of 95% and 97% accuracy. The course meets 10 hours per week. A grade of "C" or better is required for graduation. **PREREQUISITES:** BC 404 and 60 WPM NET typing; **COREQUISITES:** BC 311, BC 410, BC 405, and BC 500.

*Offered Spring Semester*

### **BC 505 — HONORS MACHINE SHORTHAND**

3 credits

This elective course is designed for exceptional students who have met NCRA graduation speed requirements of 225 WPM Q&A, 200 WPM Jury Charge, and 180 WPM Literary with 98% accuracy. Honors students will work on high speed tapes in preparation for weekly testing sessions. Speed goals will be Merit speeds: 240-260 Q&A, 220-240 Jury Charge, and 200-220 Literary with 98% accuracy. Students will be required to complete 20 hours of speed practice each week and meet for testing three times each week.

*Offered Spring Semester*

### **BC 510 — HONORS CAT APPLICATIONS**

1 credit

This elective course is designed for students who have met NCRA graduation speed requirements with 98% accuracy and who have an interest in pursuing practical experience in real-time reporting and/or television closed captioning for the hearing impaired. Honors students will arrange for a minimum of 15 hours of participation in one or both of the above-mentioned applications with specialized area reporters (Springfield, Hartford, Boston). Students will be asked to submit a written report on this practical experience. **PREREQUISITE:** BC 310 or BC 311.

*Offered Spring Semester*

### **BC 605 — MACHINE SHORTHAND 6/ADVANCED COURT REPORTING TECHNOLOGY/INTERNSHIP**

4 credits

This course is restricted to Court Reporting majors who have not completed the requirements of Machine Shorthand 5 and/or Court Reporting Technology/Internship. The student works independently with speed tapes and is tested regularly at CSR and RPR levels. He/she affiliates with a local reporting firm and/or with an official reporter, spending a minimum of 15 hours per week attending actual cases and transcribing. Grades are based on high-speed dictations and recommendations of the cooperating firm. Seminars will be held weekly. A grade of "C" or better is required. **PREREQUISITES:** BC 404, BC 090, BC 410.

*Offered Fall Semester*



## Criminal Justice (See Law Enforcement/Criminal Justice)

## Data Processing (See Computer Information Systems/ Data Processing)

## Dental Assistant

### **AD 100 — DENTAL ASSISTING TECHNIQUES 1**

3 credits

This course is primarily designed to educate the student in the proper identification, care and use of all types of dental equipment and instruments. As the student progresses, he/she will have a working knowledge of tray set-ups and instrument sequencing for each dental procedure to enable the student to utilize 4-handed chairside assisting effectively. Aseptic techniques, including an understanding of the principles of microbiology and sterilization are emphasized in this introductory course. In addition, dental terminology and charting procedures will be discussed.

*Offered Fall Semester*

### **AD 102 — ORAL ANATOMY**

2 credits

Study of the anatomy, embryology and histology of oral structures with emphasis on deciduous and permanent dentitions including morphology, eruption, function and occlusions.

*Offered Fall Semester*

### **AD 103 — DENTAL RADIOLOGY 1**

3 credits

This course is primarily designed to afford the student an opportunity to integrate the theoretical as well as the practical application of exposing, processing, mounting and interpreting full-mouth and bite-wing radiographs through the use of the bisecting and paralleling techniques. These goals are achieved through the utilization of simulated exercises and clinical practice which will aid the student in developing radiographic expertise. In addition, panoramic radiography will be discussed.

*Offered Fall Semester*

### **AD 104 — DENTAL MATERIALS 1**

4 credits

The chemical, physical and manipulative properties of common materials used in dentistry are studied. Attempt is made to correlate the major specialties in dentistry. The role of the dental auxiliary in the manipulation and application of these materials is stressed.

*Offered Fall Semester*

### **AD 105 — DENTAL SCIENCES 1**

2 credits

This course is primarily designed to educate the student in all phases of diet, nutrition, and oral health. It is intended to familiarize the student with basic nutritional deficiencies and oral manifestations that the patient may experience as a result of his/her dietary habits. Also covered in the course are the principles of nutritional counseling. As the student progresses, he/she will have a working knowledge of the techniques of counseling patients according to their specific dietary and oral health needs. In addition, the various techniques of oral physiotherapy will be discussed.

*Offered Fall Semester*

### **AD 200 — DENTAL ASSISTING TECHNIQUES 2**

3 credits

A continuation of first semester, this course seeks to advance the skill and dexterity of the student in all techniques. There is a coordination of activities in an effort to combine efficient chairside performance with general dental assisting tasks. Additionally, this course is designed to enhance the student's awareness of various employment opportunities that will be available upon graduation. To accomplish this goal, the student will pursue an in-depth

## DENTAL ASSISTANT

study of the numerous dental specialties, including Periodontics, Orthodontics, Oral Surgery, and Endodontics, to name a few. With this knowledge, the student should be able to integrate effectively the theory of dental assisting with the practical application of all procedures. In order to educate the student as to his/her legal responsibilities to the dentist, the patient, and ultimately to the field of dental assisting, the student will also receive lectures on ethics and jurisprudence as they pertain to the practice of dentistry.

*Offered Spring Semester*

### **AD 201 — DENTAL SCIENCES 2**

3 credits

This course is designed to familiarize the student with the various tissue changes that may occur in the patient's oral cavity as a result of pathological and/or systemic conditions. Also included will be a study of medical emergencies and their respective first-aid treatment procedures. Specific types of pharmacological agents that are utilized in the dental office in order to alleviate pain, fear or enhance anesthesia as well as those agents which are prescribed to the patient to control systemic disease will be discussed. The student will be required to enroll in and pass a Certified Cardiopulmonary Resuscitation course which will be offered in conjunction with this area of study.

*Offered Spring Semester*

### **AD 202 — DENTAL RECORDS**

2 credits

This course is primarily designed for the dental assistant. Included will be basic business procedures which are essential to the effective management and control of the dental office. Business skills are reviewed and developed for practical application in the office. In addition, procedures in filing, banking, billing, managing the appointment book, organizing a preventive recall system, insurance, tax forms, and all types of financial transaction which might be found in the dental practice will be explored.

*Offered Spring Semester*

### **AD 203 — DENTAL RADIOLOGY 2**

1 credit

A continuation of the first semester, this laboratory course enables the student to further enhance his/her skills in the techniques of radiographs through the utilization of the bisecting and paralleling techniques. These goals are achieved through the use of simulated exercises and clinical practice on patients which will aid the student in developing radiographic expertise within the dental office.

*Offered Spring Semester*

### **AD 204 — CLINICAL AFFILIATION**

5 credits

Since the College does not have a dental school with which to affiliate, this portion of the student's training is accomplished through the continued interest and cooperation of our area dental society. At this time, the student should be able to expand his/her dental assisting education and to improve his/her chairside skills under the direct supervision of dentists and auxiliary personnel.

*Offered Spring Semester*

## Dental Hygiene

### **AH 101 — CLINICAL PRACTICE 1**

4 credits

Lectures and preclinical laboratory sessions are presented to introduce the etiology and prevention of dental diseases, normal oral conditions and common deviations, theory and practice in specific clinical techniques in the practice of dental hygiene. Students must pass both laboratory and theoretical components of the course in order to continue in the program.

*Offered Fall Semester*

### **AH 103 — ORAL ANATOMY 1**

2 credits

This course is designed to familiarize the dental hygiene student with the anatomical components and functions of the teeth and supporting structures. Soft tissue landmarks of the oral cavity, dental terminology, and occlusion will be studied.

*Offered Fall Semester*

**AH 104 — DENTAL RADIOLOGY**

3 credits

An introductory course in dental radiology, including theoretical concepts of the characteristics of radiation, the dental x-ray machine, effects of radiation exposure, radiation protection, image receptors and their processing, dental radiographic anatomy, and intra-oral radiographic procedures.

*Offered Fall Semester***AH 200 — NUTRITION**

2 credits

The basic principles of concepts of nutrition are studied with emphasis on their relation to oral health, caries control, and one's overall general health. An orientation to counseling techniques for diet modification in the practice of preventive dentistry will be covered. **PREREQUISITE:** MB 140.

*Offered Spring Semester***AH 201 — ORAL PATHOLOGY**

2 credits

Introduction to the basic principles of disease pertaining to the head and oral structures will provide the background for recognition of such diseases within the scope of the dental hygienist's practice and responsibility.

*Offered Spring Semester***AH 202 — CLINICAL PRACTICE 2**

5 credits

A continuation of Clinical Practice 1 with supervised clinical experience. The student will be introduced to advanced dental hygiene theory with consideration of medically compromised patients. The student will be assisted to develop mental processes necessary to collect and analyze patient problems and thereby render quality dental hygiene services. Students must pass both the clinical and theoretical components of the course in order to continue in the program. **PREREQUISITES:** AH 101, AH 103, AH 104.

*Offered Spring Semester***AH 203 — ORAL ANATOMY 2**

2 credits

A continuation of Oral Anatomy AH 103 with emphasis on the embryology and histology of the maxillofacial area and dental structures. Attention will be given to skeletal structure, muscle function, blood supply, and innervation of the maxillofacial region. **PREREQUISITES:** AH 103, MB 132.

*Offered Spring Semester***AH 300 — PERIODONTOLOGY**

2 credits

This course will explore the pathogenesis, diagnosis, and treatment of periodontal disease. Emphasis will be given to the microbiological progression of periodontal disease, host response, diagnostic methods, treatment philosophies, treatment modalities, and the role of the dental hygienist in the treatment and prevention of periodontal disease.

*Offered Fall Semester***AH 301 — DENTAL MATERIALS 1**

3 credits

This course is designed to familiarize the dental hygiene student with knowledge of the various dental materials placed in and around the oral environment. Focus will be placed on the composition, chemistry, clinical properties, mixing techniques, advantages, disadvantages, and setting times of the more common materials utilized in the dental setting. The role of the dental auxiliary in the manipulation and application of these materials is stressed. Students must pass both the clinical and theoretical components of the course in order to continue in the program.

*Offered Fall Semester***AH 302 — PHARMACOLOGY**

2 credits

Study of drugs and their effects on living tissues. Emphasis will be placed on the drugs which are utilized in dentistry. Dosage, physical and chemical properties and modes of administration will be considered. **PREREQUISITES:** MB 140, AH 203.

*Offered Fall Semester***AH 303 — CLINICAL PRACTICE 3**

6 credits

A course designed to enhance the comprehension of dental hygiene services and to apply basic sciences to the practice of dental hygiene. The students will learn to expand upon



## DENTAL HYGIENE

their basic skills in areas such as radiographic interpretation, restoration, recontouring, recognition and charting of periodontal diseases, patient motivation, and advanced hand instrumentation. The application of the theoretical background to the clinical techniques will enable the student to provide comprehensive patient care. Students must pass both the theoretical and clinical components of the course in order to continue in the program. **PREREQUISITE:** AH 202.

*Offered Fall Semester*

### **AH 400 — COMMUNITY DENTAL HEALTH**

3 credits

A series of lectures and a field project designed to introduce the student to the dental needs and demands of the community. Students propose, plan, and participate in a community dental service project which is designed to assist a community organization with dental health education, epidemiology, dental public health, fluoridation, and provision of dental care.

*Offered Spring Semester*

### **AH 401 — CLINICAL PRACTICE 4**

6 credits

A course designed to provide students with the theoretical background needed to perform advanced clinical procedures to function as a respected member of the oral health team in any dental practice setting, and to utilize higher level thinking to make decisions regarding patient care. Emphasis is placed on periodical therapy for dental hygienists, ethics, and jurisprudence in dentistry, application for employment, third party systems, appointment control and recall systems. Simulation exercises, role playing, reading and research in the field will enable the dental hygiene students to discover their personal ethics and values in dentistry so that they will be able to handle most situations in the dental environment. Students must pass both clinical and theoretical components of the course in order to continue the program. **PREREQUISITE:** AH 303.

*Offered Spring Semester*

### **AH 402 — APPLIED DENTAL AUXILIARY SKILLS**

2 credits

This introductory course is designed to provide the dental hygiene student with an overall view of the various duties that may be within the performance realm of the dental hygienist. The course will provide the background information and introduce basic techniques to perform a wide variety of functions. Emphasis will be placed on those duties that are currently accepted within the state practice laws including rubber dam application, placement and removal of periodontal dressings, suture removal, placement of temporary restorations and application of sealants.

*Offered Spring Semester*

## Developmental English (See English)

## Diagnostic Medical Sonography

### **AS 100 — SONOGRAPHIC PHYSICS 1**

3 credits

Acoustic physics is presented in terms of the characteristics and properties of sound energy, and the manner in which very high frequency sound (ultrasound) is used in imaging. The physical principle examined will include wave forms, propagation, relationship of velocity of propagation to frequency and wave length, acoustic impedance, reflection, refraction, basic layout of a pulsed echo imaging system and other types of attenuation, and transducers. **PREREQUISITE:** MM 125 Mathematical and Algebraic Functions.

*Offered Fall Semester*

### **AS 101 — PRINCIPLES OF SONOGRAPHIC IMAGERY 1**

3 credits

A comprehensive presentation of the normal anatomy, anatomical variants, and specific pathologic entities in the pelvis, gravid uterus, adult and pediatric heart, and the major

# DIAGNOSTIC MEDICAL SONOGRAPHY

peripheral vascular structures which may be detected and evaluated by diagnostic ultrasound. Concurrent: AS 100.

*Offered Fall Semester*

## **AS 200 — SONOGRAPHIC PHYSICS 2**

3 credits

Sonographic physics is applied as related to the ultrasound system design and instrumentation. Principles of fluid dynamics and the fundamentals of Doppler physics and instrumentation are presented. Quantitative methods utilized in acoustic output measurement and quality assurance are discussed. The current data on the biologic effects of ultrasound are reviewed. PREREQUISITE: AS 100.

*Offered Spring Semester*

## **AS 201 — PRINCIPLES OF SONOGRAPHIC IMAGERY 2**

2 credits

A continuation of AS 101 Principles of Sonographic Imagery 1. PREREQUISITE: AS 101; Concurrent AS 200.

*Offered Spring Semester*

## **AS 202 — SONOGRAPHIC PROCEDURES 1**

2 credits

An introduction to the basic principles of ultrasound imagery as they apply to abdominal/Obs./Gyn. and cardiac imaging. PREREQUISITES: AS 200, AS 201, and MB 340.

*Offered Summer*

## **AS 203 — PRACTICUM**

2 credits

A clinical practicum designed to orient the student to common ultrasound procedures, and to the overall operation, departmental policies and basic patient care in ultrasound departments in hospitals. CONCURRENT: AS 202.

*Offered Summer*

## **AS 300 — SONOGRAPHIC PROCEDURES 2**

3 credits

A study of the principles and procedures of ultrasound imaging, specifically focusing on abdominal, cardiac, and Obs./Gyn. ultrasound imaging. PREREQUISITES: AS 202, AS 203.

*Offered Fall Semester*

## **AS 301 — PRACTICUM 2**

3 credits

A clinical practicum to assist students to transfer the principles/concepts learned in AS 300 to the clinical application. CONCURRENT: AS 300.

*Offered Fall Semester*

## **AS 400 — SONOGRAPHIC PROCEDURES 3**

3 credits

An in-depth continuation of AS 300 with attention to the need for modification of procedure due to pathophysiological conditions. PREREQUISITES: AS 300, AS 301.

*Offered Spring Semester*

## **AS 401 — PRACTICUM 3**

3 credits

A clinical practicum planned to provide learning opportunities for students to apply knowledge of principles/concepts and procedures of abdominal/Obs./Gyn. and cardiac imaging to patients in the clinical area. CONCURRENT: AS 400.

*Offered Spring Semester*

## **AS 402 — SONOGRAPHIC PROCEDURES 4**

2 credits

The basics of M-mode and two-dimensional echocardiography are explored. The student is further oriented to other sonographic procedures that may be performed in ultrasound laboratories as well as in the field of nuclear medicine; C.T. scanning; radiation therapy, dark-room protocol and electrocardiography. PREREQUISITES: AS 400, AS 401.

*Offered Summer*

## **AS 403 — PRACTICUM 4**

2 credits

A comprehensive practicum to assist students to apply prior learning and acquire skills in the cognitive, psychomotor, and affective domains. PREREQUISITE: AS 401; CONCURRENT: AS 402.

*Offered Summer*

## Drafting Technology (See Mechanical Engineering Technology)

### Early Childhood Education

#### **NC 100 — INTRO. TO EARLY CHILDHOOD EDUCATION**

3 credits

Provides students the opportunity to develop a realistic view of the teaching profession, and fosters an understanding of the major issues in early education, including the history and philosophy of contrasting early childhood education models; components of quality early learning; design of environments; child observation techniques; basic teaching skills; licensing regulations; and home/school/community relationships.

*Offered Fall Semester*

#### **NC 110 — CHILD GROWTH AND DEVELOPMENT**

3 credits

Examines the growth and development of young children from conception through early elementary school years in view of the contemporary theories and findings of Erikson, Piaget, and others. Contributions from pediatric, nutritional, social services, and other disciplines are included. A major focus will be ways in which young children construct knowledge about their physical, social, and intellectual worlds. Alternative styles of child rearing in different cultures are integrated into the course. This course meets Office for Children requirements for training under Category A.

*Offered Fall Semester*

#### **NC 120 — EARLY CHILDHOOD FIELD WORK 1**

1 credit

Provides students with opportunity to develop skills in working with young children and to integrate theories of child development with direct experience in an early learning environment.

*Offered Fall Semester*

#### **NC 200 — CURRICULUM FOR EARLY CHILDHOOD EDUCATION**

4 credits

Provides students with integrated experiences in applied early learning through lecture, discussion, and workshops in creative expression, dramatics, mathematics, science, sensory motor play and music and movement with a focus on young children's need to feel, handle, and manipulate materials as the means of learning about their world. Explores the teacher's role in providing encouragement and stimulation so that children feel free to express their ideas through many media. Special attention is given to the role of play in development. Included are program techniques which foster the development of healthy self concept and methods for mainstreaming in the early childhood setting. Students learn to evaluate young children's thinking and plan curriculum activities appropriate to their current developmental levels. **PREREQUISITES:** NC 100, NC 110.

*Offered Spring Semester*

#### **NC 215 — OBSERVING & RECORDING OF CHILD BEHAVIOR SEMINAR**

2 credits

Provides the students with the opportunity to increase their objectivity and proficiency in observing and interpreting children's behavior. Class presentations and discussions also focus on content and materials of early learning as part of the environment in which group behaviors occur. Taken simultaneously with NC 220.

#### **NC 220 — EARLY CHILDHOOD FIELD WORK 2**

2 credits

Students spend six hours per week in the role of student classroom aide to provide direct experience with children in a group setting in which they have opportunities to plan and implement learning experiences in the areas they are studying in the curriculum course. **PREREQUISITES:** NC 100, NC 110.

*Offered Spring Semester*

#### **NC 250 — YOUNG CHILDREN AND BOOKS**

3 credits

This course provides the student with a study of the rich and dazzling world of literature for young children, focusing on picture books where art and literature blend into an aesthetic whole. Course content will include types of books, types of illustrations, techniques of pre-



sensation, reviews of children's authors, previews of audiovisual materials based on books, and methods of eliciting children's responses to literature. PREREQUISITES: NC 110, NC 120.

## **NC 300 — LANGUAGE & READING INSTRUCTION IN EARLY CHILDHOOD** 4 credits

This course focuses on literacy, creativity, linguistics, and developmental reading approaches for children from preschool through early elementary school, stresses the inter-relatedness of the language arts (reading, writing, listening, speaking), and provides opportunities for students to develop ways of working with young children that emphasize creative expression and critical thinking in communication. Teaching strategies and learning materials that include print-rich environments and emphasize the child as a reader during the emergent, initial, and established stages of reading development will be explored, designed, and implemented. Students will develop skills in the areas of planning and presenting lessons, individualizing and sequencing curriculum and instruction, and using appropriate methods, media, and materials. PREREQUISITES: NC 110, NC 200, NC 220.

*Offered Fall Semester*

## **NC 325 — UNDERSTANDING CHILD BEHAVIOR SEMINAR** 2 credits

This course provides students with effective teaching strategies and practical approaches to managing the behavior of young children. Students examine the assumptions and principles underlying the major discipline systems, including positive discipline, behavior modification, logical consequences, and others. It is expected that students will practice the selected techniques in their practica. This course provides a framework for positive classrooms that are supportive of children's self-esteem and responsive to diverse individual backgrounds. The importance of teacher's self-awareness will be emphasized. PREREQUISITES: NC 110, NC 200, NC 220. Taken simultaneously with NC 335.

## **NC 335 — EARLY CHILDHOOD PRACTICUM 1** 4 credits

Provides students with extended experiences in two group settings, as strategies for classroom management are explored and refined. Students will practice the selected techniques studied in NC 325. The primary objective is to assist students in cultivating a systematic yet personalized approach to classroom management and individualized behavior planning which emphasizes prevention. PREREQUISITES: NC 110, NC 200, NC 220.

## **NC 400 — EARLY CHILDHOOD PRACTICUM 2** 6 credits

Provides students with opportunities to increase their skills in working with young children and to integrate theories of child development with developmentally appropriate practice in the classroom. Students work under the direction of an experienced teacher as they increasingly assume responsibilities for the management of the classroom and the organization and design of the curriculum. Integrated and sequenced series of learning experiences for a child or for a group of children are planned, implemented, and evaluated by the students. In frequent conferences with their cooperating teachers and college supervisor, students continuously evaluate all aspects of their teaching. PREREQUISITES: NC 300, NC 325, NC 335.

*Offered Spring Semester*

## **NC 410 — HEALTH AND SAFETY FOR INFANTS AND CHILDREN** 1 credit

The student will earn Red Cross certificates in Health and Safety for Infants and Children, and Infant and Child CPR. PREREQUISITE: NC 110.

## **NC 425 — EARLY CHILDHOOD PROGRAM PLANNING** 3 credits

This course is intended to help students acquire the interpersonal and organizational skills required for leadership in the early childhood field. It includes program issues of health and safety, nutrition, social services, parent involvement, personnel policies, educational programming, assessment and evaluation, budgeting, professional development, and community resources, and focuses on a study of the practical aspects of program operation. It considers various early childhood education models and the respective implications for curriculum planning, together with an emphasis on the mainstreaming concept.

## EARLY CHILDHOOD EDUCATION

A special focus is strategies for communication among adults: staff members, parents, and personnel from other agencies. The role of the teacher and laws affecting school environments will be considered. **PREREQUISITES:** NC 300, NC 325, NC 335.

*Offered Spring Semester*

## Economics

### **NE 100 — PRINCIPLES OF ECONOMICS 1**

3 credits

This course is primarily concerned with macroeconomics and aims at developing an understanding of American economic institutions and the economic problems of inflation, unemployment and economic growth. Emphasis is given to the principal tool of economists, the market model of demand and supply. The effects of both fiscal and monetary policies on the major problems of the economy are thoroughly explored. **PREREQUISITE:** None.

*Offered Fall and Spring Semesters*

### **NE 200 — PRINCIPLES OF ECONOMICS 2**

3 credits

This course is the sequential course to Principles of Economics 1 NE 100 and is primarily concerned with Microeconomics. Microeconomics deals with the subsystems of the economy such as the economics of the firm and the industry. The major emphasis is on a thorough analysis of supply and demand and of the four market structures. The theories and concepts are then applied to such relevant topics as poverty, ecology, and population growth. **PREREQUISITE:** NE 100.

*Offered Fall and Spring Semesters*

### **NE 300 — CURRENT ECONOMIC PROBLEMS**

3 credits

A course designed to acquaint the student with several of the more important problems of our economy such as economic growth, unemployment, consumer credit, cost of air pollution and population explosion.

*Offered Fall and Spring Semesters*

### **NE 310 — COMPARATIVE ECONOMIC SYSTEMS**

3 credits

This course considers an analysis of today's major economic systems, such as the American modified market economy, the mixed economics of Western Europe, France, Germany, United Kingdom and the command economies of the Soviet Union and the Peoples Republic of China. **PREREQUISITE:** NE 100.

*Offered Spring Semester*

### **NE 320 — DEVELOPMENT ECONOMICS SEMINAR**

3 credits

This seminar will survey various economic growth models with focus on the theories and issues of development economics as they apply to the real world economic situations in the Third World. The organizational structures and strategies designed to cope with issues and problems of economic development in the Third World will be analyzed. There will be an in-depth study done on the basis of selected countries in the Third World. **PREREQUISITE:** NE 100. Honors component available.

*Offered Spring Semester*

## Electrical/Robotics Technology

### **EE 110 — BASIC ELECTRICITY 1**

3 credits

Course dealing with the basic theories and concepts essential to the practical understanding of all phases of electricity and electronics. It treats fully the nature of electricity and magnetism, including an exposition of the electron theory as it relates to electricity. Consideration is given to Ohm's Law, and to associated circuits, batteries, included E.M.F., magnetic circuits, DC measuring instruments, motors and generators. Prerequisites: High school Algebra 1 and 2.

*Offered Fall Semester*

**EE 121 — CAD FOR AUTOMATION**

3 credits

Computer Assisted Drafting (CAD) for Automation is directed toward the drafting of industrial electronic circuits, robotic work cells, and flow lines. The student will learn basic CAD skills on the IBM PC and apply these skills to the creation of electronic circuits and automated systems. The proper arrangement of associated equipment, robots, conveyors, and vision systems is fundamental to the trends in industry. This course is also a foundation for other courses in this program.

*Offered Fall Semester***EE 140 — BASIC PROGRAMMING FOR MICROCOMPUTERS**

3 credits

This is an introductory course requiring no previous knowledge of microcomputers. The course contains two distinct topics: microcomputer fundamentals, and BASIC programming on microcomputers. Microcomputer fundamentals topics will include what is a computer and its basic components and how they work together to form an operating system. Programming in BASIC topics will include simple and subscripted variables, input and output, if then/go to/gosub, and fornext control statements. Read data and algorithms relating to sorting data.

*Offered Fall Semester***EE 210 — BASIC ELECTRICITY 2**

3 credits

Understanding of the basic electrical and electronic principles of DC circuits extended to include the more complex area of AC circuits. Generation, vector representation and algebraic manipulation of the sine wave, inductance, capacitance, resonance and Ohm's Law for alternating current circuits are studied. Practical methods of measuring inductance, capacitance and impedance are discussed along with AC and DC bridge circuits. Included are also the rudiments of complex-wave formation and analysis. In the laboratory, the student will perform experiments confirming theory and will be given experience and training in the repair of AC equipment. PREREQUISITES: EE 210, MM 132.

*Offered Spring Semester***EE 241 — FUNDAMENTALS OF MOTOR CONTROL**

3 credits

This is a second semester course, and an understanding of D.C. fundamentals is required. The course covers devices, circuits, materials, motors and generators, controls, and transformers, with the emphasis on controls. Topics to be covered in the controls area are: start stop three wire control, start stop and jog three wire control, and forward and reverse control circuits. The laboratory is a required part of the course, and is a reinforcement of the topics presented in class. PREREQUISITE: Department Chair's approval.

*Offered Spring Semester***EE 320 — INDUSTRIAL ELECTRONIC CIRCUITS 1**

3 credits

This course deals with the fundamental circuits and components most frequently found in industrial electronic equipment. The basic circuit of a complete electronic control system and the characteristics of the component parts of each circuit are studied. Emphasis is placed on the characteristics of solid state devices and sensing elements. The laboratory section of the course is designed to verify by means of experiments the characteristics of the components and circuits used in industrial electronics. It is intended to develop an understanding of those circuit construction practices and testing techniques common to the field. PREREQUISITES: EE 110, 210.

*Offered Fall Semester***EE 330 — SEMICONDUCTORS & TRANSISTORS 1**

3 credits

The principles and electrical properties of semiconductor diodes and transistors are studied. Special emphasis is placed upon the uses of semiconductor devices in rectifiers, amplifiers, oscillators and special circuits. The accompanying laboratory work enables the student to measure the properties of these devices and to verify their operating principles and uses in actual circuits. PREREQUISITES: EE 110, 210.

*Offered Fall Semester***EE 340 — ROBOTICS 1**

3 credits

The purpose of this course is to provide an overview of Robotic Technology. It explores the basic principles of sensor systems, data acquisition systems, control systems, and actua-



## ELECTRICAL/ROBOTICS TECHNOLOGY

tion systems. One aspect of the course that makes it unique is the attention given to hardware, which makes this course practical for technicians. The course requires an understanding of basic electrical concepts and a working knowledge of the BASIC computer language. The laboratory will be used to perform real time exercise in microcomputer applications in controlling robotics using the BASIC language. PREREQUISITES: EE 110, EE 210, EE 140.

*Offered Fall Semester*

### **EE 350 — PROGRAMMABLE MOTOR CONTROLS**

3 credits

Control systems for electric motors are vital for the proper performance and protection of modern plant equipment. The programmable controller or PC is fast replacing many of the older relaying type logic systems; for this reason, this course deals only with programming of a modern PC. Basic relay type logic is required for this course since the PC will be used as a tool to simulate the older style relaying circuit. The laboratory associated with this course will be necessary for the complete understanding of programming the PC and how PC interfaces with the modern industrial plant control systems. PREREQUISITES: EE 110, EE 210, EE 240.

*Offered Fall Semester*

### **EE 411 — INDUSTRIAL OP-AMP APPLICATIONS**

3 credits

The study of the basic uses of operational amplifiers throughout industry begins with the differential amplifier and an overview of fundamental circuit designs. The Op-Amp is studied in the laboratory for its integral role in industrial control feedback systems such as comparators, differentiators, and integrators. PREREQUISITE: EE 430.

*Offered Spring Semester*

### **EE 430 — SEMICONDUCTORS & TRANSISTORS 2**

3 credits

A study of the circuitry and design of semi-conductor devices commonly used in industry. Among the topics covered are servo controls, switching networks, regular circuits and special amplifiers. The nature and design of these circuits are analyzed using the latest components available. PREREQUISITES: EE 210, EE 330.

*Offered Spring Semester*

### **EE 440 — SOLID STATE CRT DESIGN**

2 credits

The design and application to industrial electro-mechanical systems of electrical circuitry using solid state devices, integrated circuits, memory storage and electronics. PREREQUISITES: EE 110, EE 210, EE 320.

*Offered Spring Semester*

### **EE 451 — MICROPROCESSOR APPLICATIONS**

3 credits

This course is directed to the application and use of microprocessors in industry, with emphasis on understanding basic operation, interfacing, and application. Study includes basic architecture, developmental languages, bus structures, interfacing with peripheral devices, memory, input/output devices, and diagnostics. PREREQUISITES: EE 350.

*Offered Spring Semester*

### **EE 480 — ROBOTICS AND AUTOMATED SYSTEMS**

3 credits

This course integrates the use of robots with industrial electronics systems and devices. The student is exposed to robotic systems and practical simulated industrial applications typical in American industries. The laboratory sessions emphasize computer control, programming, robotic work cells, machining control centers, interfacing, system operation, and troubleshooting. PREREQUISITE: EE 340.

*Offered Spring Semester*

# Electronic Systems Engineering Technology

## ET 110 — BASIC ELECTRONICS 1

3 credits

This course is an introduction to the fundamental concepts of electronics. Coverage includes concepts of electricity, series and parallel circuits, network theorems and laws, and metering principles. The purpose of this course is to present the concepts and ideas which will be needed in more advanced course work about specific electronic systems. Emphasis is placed on the analysis of direct current networks, specifically, the calculation of such circuit parameters as current, voltage and power for various network configurations. **PREREQUISITES:** High school Algebra 1 and 2.

*Offered Fall Semester*

## ET 111 — INTRODUCTION TO CAET (Computer-Aided Engineering Technology)

3 credits

This course provides the electronics student with an introduction to the PC/workstation environment. After a short introduction to personal computer (PC) hardware and operating systems concepts, the student gains experience with basic computer applications (i.e., word processing spreadsheets, and database management). Next, the student is introduced to electronic drafting (CAD) and documentation using modern software tools. Finally, the student learns the fundamentals of circuit analysis, synthesis, and simulation using standard electronics industry software packages.

*Offered Fall Semester*

## ET 115 — ELECTRONICS LAB 1

2 credits

This course is the first in a sequence of four courses designed to give the student practical experience with electronic components, measuring instruments and equipment. The emphasis in the laboratory work is on the verification of theory studied in Basic Electronics 1 about direct current networks. Equal emphasis is placed on the familiarization of the student with electronic metering principles, electronic testing procedures and the use of various electronic components commonly found in the Electronics industry.

*Offered Fall Semester*

## ET 130 — CIRCUIT THEORY 1

4 credits

This course is an introduction to the fundamental concepts of electronics. Coverage includes concepts of electricity, series and parallel circuits, network theorems and laws, and metering principles. The purpose of this course is to present the concepts and ideas that will be needed in more advanced course work about specific electronic systems. Emphasis is placed on the analysis of networks. Specifically, the calculation of such circuit parameters as current, voltage, and power for various network configurations containing resistors, capacitors and inductors. In the laboratory the student gains practical experience working with electronic components, measuring instruments and test equipment. **PREREQUISITE:** Completion of MM 083 or placement testing at the level of MM 091 or higher.

*Offered Fall Semester*

## ET 210 — BASIC ELECTRONICS 2

3 credits

The fundamental concepts of alternating current circuits are presented. Starting with a review of direct current theorems and laws, the concept of alternating currents are introduced using phasor analysis. Some topics include capacitive and inductive resistance, transients, time constraints, power and power factor, the  $j$ -operator, resonant circuits, circuit  $Q$  and bandwidth, filters and switching circuits. **PREREQUISITES:** ET 110 and MM 101-MM 103.

*Offered Spring Semester*

## ET 215 — ELECTRONICS LAB 2

2 credits

A continuation of Electronics Lab 1, the emphasis in this course is again placed on practical experience. The student receives continued exposure to electronic components, test equipment and circuitry. Now the laboratory work is concerned with the verification of theory studied in the student's course work on passive networks and active solid-state devices.

# ELECTRONIC SYSTEMS ENGINEERING TECHNOLOGY

The student gains experience in the setting up and testing of useful electronic circuits and systems. PREREQUISITE: ET 115 with a "C minus" or better.

*Offered Spring Semester*

## **ET 220 — ACTIVE NETWORKS 1**

3 credits

This course is an introduction to the theory of solid state devices. Topics include an introduction to semiconductor materials and physics, dopings, P-N junctions, various diodes and diode circuits, an introduction to bipolar transistor biasing schemes, load line analysis, A-C models and equivalent circuits, determination of voltage and current gain, input, and output resistance, and maximum signal handling capability. PREREQUISITES: MM 103, ET 110, ET 115.

*Offered Spring Semester*

## **ET 225 — COMPUTER APPLICATIONS**

2 credits

This course will introduce the student to the use of the PC for solving problems related to the electronics field. First, an introduction to a high-level language such as C is given, and the student learns how to create programs in C to solve problems. Next, the student is exposed to various software applications programs which are used to aid in the course work. PREREQUISITE: ET 111 or permission of instructor.

*Offered Spring Semester*

## **ET 230 — CIRCUIT THEORY 2**

4 credits

This course will continue the presentation of the material introduced in Circuit Theory 1. After a short review of network and DC and AC theory, frequency selective networks and circuits consisting of passive components introduced in Circuit Theory 1 will be studied and analyzed. Emphasis will be given to practical circuits such as filters. In the second half of the course, the student will be introduced to active networks and circuits. The fundamentals of diode and transistor operation will be covered. How these devices are biased and used as circuit and network elements will be studied. In the laboratory the student will gain increased practical experience working with both passive and active electronic components, sophisticated measuring instruments, and other test equipment. PREREQUISITE: ET 130 or permission of instructor.

*Offered Spring Semester*

## **ET 235 — DIGITAL SYSTEMS**

4 credits

This course is an introduction to digital logic and circuits. Topics include number systems, logic gates, Boolean algebra and binary codes, combinational logic circuits, flip-flops and timing circuits, counters and registers, memory devices, and programmable logic. Additionally, the characteristics of logic families such as TTL, CMOS, and ECL will be studied. The laboratory portion of the course will allow the student to gain practical experience with logic gates and more complex digital ICs. PREREQUISITE: ET 130 or permission of instructor.

*Offered Spring Semester*

## **ET 240 — AUTOMOTIVE ELECTRONICS 1**

4 credits

This course introduces the principles of electricity and electronics. The topics include current, voltage, resistance, series and parallel circuits, magnetism, capacitance, and DC and AC current. Topics in semi-conductor diodes and transistors are also introduced.

*Offered Spring Semester*

## **ET 330 — FUNDAMENTALS OF PULSE & DIGITAL CIRCUITS**

3 credits

The fundamentals applying to nonsinusoidal pulse, timing and switching circuits are presented. The theory is demonstrated by actual measurement and observation and the circuits are analyzed mathematically in detail. Some of the topics covered include the application of circuit theorems, waveform analysis, integration and differentiation circuits, semiconductors as switches, multivibrators, sawtooth generators and gating and delay circuits. PREREQUISITE: Senior standing.

*Offered Fall Semester*



**ET 342 — COMPUTER SYSTEMS**

3 credits

This course is an introduction to the theory of computer systems operation. What a computer system consists of is examined in detail from both a software and hardware viewpoint. The organization of memory, CPU, and I/O internal to the computer is presented. The operation and characteristics of peripheral devices such as disk drives, printers, and monitors are covered. An introduction to DOS is given and application software is reviewed. Finally, the concepts of computer networks are introduced. **PREREQUISITES:** Senior standing in ET and ET 235 or permission of instructor.

*Offered Fall Semester***ET 343 — LINEAR CIRCUITS**

4 credits

This course presents material about the theory and operation of discrete solid state devices such as diodes and transistors. Biasing techniques and practical applications are emphasized. The second half of the course introduces the student to the operational amplifier. Use of the Op-Amp as a building block type of circuit is covered in detail. The laboratory portion of the course allows the student to gain practical hands-on experience in the construction and trouble-shooting of typical active circuits such as amplifiers and oscillators using both discrete components and linear integrated circuits. **PREREQUISITES:** ET 130 and ET 230 or ET 110 and ET 210, and ET 115 and ET 215.

*Offered Fall Semester***ET 344 — COMMUNICATIONS SYSTEMS 1**

4 credits

The aim of this course is to present information about the circuit processes and basic theories essential to the understanding of communications systems. Topics included in the course are noise limitations, filter theory, amplitude, frequency and single side-band modulation, radio receivers, and transmission lines. How these systems are used to transmit different information forms such as audio, video, or digital data signals is studied in detail. The laboratory portion of the course allows the student to gain practical experience with typical communications hardware and some computer applications programs pertinent to the communications field. **PREREQUISITE:** Senior standing in ET or permission of the instructor.

*Offered Fall Semester***ET 345 — AUTOMOTIVE ELECTRONICS 2**

4 credits

This course is a continuation of the electronic topics introduced in ET 240. Beginning with a review of semi-conductor principles and devices, the course thoroughly investigates digital electronics and micro-processor theory and applications, particularly as related to the modern automobile. **PREREQUISITE:** ET 240.

*Offered Fall Semester***ET 442 — LINEAR SYSTEMS**

4 credits

This course continues the presentation of materials started in ET 343. First, the more advanced applications of operational amplifiers are considered. Waveform generators, oscillators, instrumentation amplifiers and active filters implemented with op-amps receive coverage. Then, the emphasis switches to more advanced ICs used as modulators, demodulators, frequency multipliers, timers, voltage regulators, A/D and D/A converters, V/F and F/V converters, and other exotic Data Acquisition devices. The laboratory portion of the course allows the student to gain hands-on experience with both operational amplifier circuits and other complex IC components such as A/D converters. **PREREQUISITE:** Senior standing in ET and ET 343 or permission of instructor.

**ET 443 — MICROPROCESSOR ARCHITECTURE**

4 credits

This course presents the theory of operation, the various different architectures, and the methods of interfacing of present day microprocessors. The substitution of software for hardware in logic design, the concept of the embedded controller, and the architectural features of current microprocessors/microcomputers such as the Intel 80X86 and Motorola 680X0 series will be covered in detail. The laboratory portion of the course will allow the students to gain practical hands-on experience with the programming, interfacing, and application of the microprocessor/microcomputer to the controlling of real world systems. **PREREQUISITE:** Senior standing in ET or permission of instructor.

# ELECTRONIC SYSTEMS ENGINEERING TECHNOLOGY

## **ET 444 — COMMUNICATIONS SYSTEMS 2**

4 credits

This course is a continuation of ET 344. It consists of a comprehensive study of theory relative to the operation of various electronic communication systems. First, theory applying to transmission lines, Smith Chart usage, modern antennas, and electromagnetic propagation is covered with some attention given to broadband cable systems. Next, digital modulation systems and broadband communications systems are explored in detail. The last portion of the course deals with microwave application, systems and devices, fiber optics and their applications, communications satellites, and television. The laboratory portion of the course allows the student to gain practical experience with typical communications systems with an emphasis on fiber optic and photonic communications. **PREREQUISITE:** ET 344 or permission of instructor.

## Energy Systems Technology

### **HP 110 — THEORY OF CONTROLS**

3 credits

A course designed to deal with the basic theories and concepts required by both air conditioning and heating servicemen. Topics covered include: Basic electricity, meters, principles of motor operation, transformers and relays, along with an introduction to control circuits. These studies are essential in order that the individual comprehends the control circuits to which he will be exposed in his future courses.

*Offered Fall Semester*

### **HP 120 — ENERGY SYSTEMS LAB 1**

2 credits

A course that deals with the development of the manual and technical skills required in the Heat/Power/Air Conditioning industry. Attention is given to current principles and practices that apply to the care and use of hand tools and measuring devices, basic machines, tubing and piping layouts, soldering and welding construction, metal fabrication, equipment services and installation, fundamental electric circuit wiring and field service training.

*Offered Fall Semester*

### **HP 132 — ENGINEERING GRAPHICS 331**

2 credits

A course that deals with the breakdown of a 3 dimensional object into simpler 2 dimensional views. These views are used to show internal shapes and dimensions of the object. Emphasis is placed on the basic skills such as proper use of drafting instruments and producing neat, concise drawings.

*Offered Fall Semester*

### **HP 220 — COMBUSTION CONTROL CIRCUITS**

3 credits

Domestic and light commercial heating control systems for steam, forced warm air and forced hot water, and the components which make up each control system are covered in detail. Residential oil burners and their components, thermostats, and basic trouble-shooting are also covered during this semester. **PREREQUISITE:** HP 110.

*Offered Spring Semester*

### **HP 230 — ENERGY SYSTEMS LAB 2**

2 credits

An advanced course that is predominantly a laboratory program. Instruction is directed toward the student achieving competency in specialized skill areas, including electrical control wiring, oil burner installation and servicing, and heating system-related components installation. Specific lab assignments directed toward installation and set-up of residential heating systems. **PREREQUISITE:** HP 120.

*Offered Spring Semester*

### **HP 240 — PRINCIPLES OF REFRIGERATION**

3 credits

The science of refrigeration is based on physics, chemistry, and the transfer of heat which forms the foundation for an understanding of the refrigeration process. After these principles are learned in the first few weeks, emphasis is placed on the refrigeration cycle and its components. A study is made of the properties of the refrigerants that are used in the different applications, and of the instruments that are necessary in the servicing of these systems, both domestic and commercial. Extensive lab assignments also bring to the students



a hands-on approach to the analyzing and servicing of refrigeration and air conditioning systems.

*Offered Fall Semester*

## **HP 320 — HEATING SYSTEM DESIGN**

3 credits

A lecture course designed to acquaint the student with the proper principles used in designing hot air heating systems. A thorough coverage is made of heat transfer through building materials essential in the calculations of heat losses, for both residential and commercial structures. Instruction is given in the layout and construction of heating hot air systems. The student will develop the knowledge required to design efficient heating systems.

*Offered Spring Semester*

## **HP 330 — POWER PLANT OPERATION 1**

3 credits

An extensive study is made of the complex systems that make up the steam generation plant. Emphasis is placed on: boiler and steam generators and their classification and structural design; applied mechanics and related equipment such as heaters, receivers, pumps, and piping systems. Combustion and the transfer of heat released by the burning of fuels requires a study of thermodynamics and the heat capacities of different substances. Steam tables and other charts are used. Chimneys and the mechanical draft equipment required for the combustion process are also studied.

*Offered Spring Semester*

## **HP 340 — FUNDAMENTALS OF AIR CONDITIONING**

3 credits

With the knowledge gained in Principles of Refrigeration (HP 240), a more advanced study is emphasized through extensive lab assignments dealing with the larger systems. Motors and motor safety controls, as well as other related electrical components, including relays, contactors, and transformers. Schematics and testing instruments are used in performing service and diagnostic functions. The lecture series is an in-depth study concerned with the application of the engineering principles used in the design of conditioning systems. These include psychrometrics, building surveys and load estimating procedures, ductwork and air distribution systems.

*Offered Spring Semester*

## **HP 350 — MICROPROCESSOR CONTROLS**

3 credits

This course is designed to acquaint the student with microprocessor-based burner control systems as used on commercial/industrial applications. Further attention is given on converting relay logic ladder diagrams into solid state control systems using programmable controllers. The laboratory portion of this course will provide the student with hands-on experience in the application of commercial and industrial control systems using microprocessor-based and programmable controllers. **PREREQUISITE:** HP 220.

*Offered Fall Semester*

## **HP 411 — ADVANCED HEATING SYSTEM DESIGN**

4 credits

This course is designed to acquaint the student with the proper principles and procedures in designing steam and hot water heating systems. Topics include specifications and data for piping and heating system components such as boilers, heat distributing units, pumps, valves, and fittings. Instruction is given in the layout of one-pipe steam systems, and series loop and one-pipe venturi forced hot water systems. In addition, the sizing and piping of indirect domestic hot water heaters is covered. **PREREQUISITE:** HP 320.

*Offered Fall Semester*

## **HP 425 — BUILDING MANAGEMENT SYSTEMS**

4 credits

This course is an in-depth study of computer-controlled building management systems monitoring all energy-related functions including the heating, air conditioning, lighting, and other environmental systems. The course will include system automation, sensors for monitoring various points in the facility, energy management system software, and remote access to the system. In the laboratory portion of this course, the student will interface the computer operations with the heating and air conditioning systems to provide a totally automated building environment.

*Offered Spring Semester*



## ENERGY SYSTEMS TECHNOLOGY

### **HP 430 — POWER PLANT OPERATION 2**

3 credits

A comprehensive study geared to an actual power plant. The College's own complex, and others in the local area are used to acquaint the student with typical power plant operations. An in-depth study is made of the components that make up the entire power station and the different combustion control methods required for safety and efficiency. Boiler feed-water treatment is a must for power engineering students because of the effects of the scaleforming salts found in water supply systems.

*Offered Fall Semester*

## Engineering and Science Transfer (See Engineering Transfer)

## Engineering Transfer Option to Engineering & Science Transfer

### **ME 100 — SPECIAL PROJECTS IN ENGINEERING 1**

1, 2, 3, or 4 credits

Special projects in engineering under the direction of an instructor. PREREQUISITE: Permission of the Department Chairperson.

*Offered Fall and Spring Semesters*

### **ME 101 — SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 1**

1, 2, 3, or 4 credits

Special projects in Engineering Technology under the direction of an instructor. PREREQUISITE: Permission of Department Chairperson.

*Offered Fall and Spring Semesters*

### **ME 102 — SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 2**

1, 2, 3, or 4 credits

Continuation of Special Projects in Engineering Technology 1. PREREQUISITE: Permission of the Department Chairperson.

*Offered Fall and Spring Semesters*

### **ME 104 — INTRODUCTION TO ENGINEERING 22/ COMPUTER PROGRAMMING**

3 credits

FORTRAN is one of the most widely-used compiler languages available for use on many modern-day computers. This course is designed to provide students with the ability to use a time-shared computer system to solve problems. The steps of program development are stressed, including problem definition and analysis; algorithm design; coding, debugging, and verification of results. Students are required to run a substantial number of programs on a modern time-shared computer system. They are taught to use a text editor and interface with the system throughout their program preparation, compilation, linking, and program verification activities. PREREQUISITE: ME 103; CO-REQUISITE: MM 155.

*Offered Spring Semester*

### **ME 106 — INTRODUCTION TO COMPUTER-AIDED DRAFTING**

1 credit

An introduction to the terminology and capabilities of the computer as an engineering design tool. Weekly lectures, laboratory exercises, and assignments will acquaint students with the available CAD software and hardware, and will enable them to produce dimensioned orthographic drawings and libraries of symbols and shapes useful in engineering applications.

*Offered Fall Semester*

### **ME 108 — INTRODUCTION TO COMPUTING (PASCAL)**

4 credits

A first course in engineering dealing with engineering computations utilizing digital computers. Specific topics include a comprehensive study of the computer language Pascal, several numerical analysis techniques, and an introduction to linear algebra. A strong

emphasis will be placed on using the computer to do extensive or repetitive computations in these areas. A brief overview of the field of engineering will also be presented. Three hours of lecture and one three-hour laboratory per week. CO-REQUISITE: MM 155.

## **ME 200 — SPECIAL PROJECTS IN ENGINEERING 2**

1, 2, 3, or 4 credits

Continuation of ME 100. PREREQUISITE: Permission of Department Chairperson.

*Offered Fall and Spring Semesters*

## **ME 203 — COMPUTER APPLICATIONS IN ENGINEERING**

4 credits

An introduction to the uses of the microcomputer as an engineering tool. Two applications will be introduced: Computer-Aided Drafting (CAD), and the spreadsheet. State-of-the-art computer hardware, software, and peripheral devices will be used. Two-thirds of the course will be devoted to CAD, the production of standard two-dimensional engineering drawings and three-dimensional graphic images as an aid to engineering design. The remaining one third of the course will introduce the spreadsheet as an engineering problem-solving tool that facilitates complex trial and error calculations and numerical modeling. CO-REQUISITE: MM 232.

*Offered Fall and Spring Semesters*

## **ME 204 — NUMERICAL ANALYSIS & COMPUTER METHODS**

3 credits

Extensive application of the FORTRAN language to diverse engineering problems. Numerical techniques for evaluating functions, curve fitting, interpolation, differentiation and integration, and solving systems of algebraic and first and second order differential equations. Satisfies concentration requirements for transfer in computer science. PREREQUISITE: ME 104, Introduction to Engineering 22/Computer Programming.

*Offered Fall Semester*

## **ME 208 — FORTRAN 77 FOR ENGINEERS**

2 credits

An introductory course in Fortran 77 on the STCC mainframe. The course presents the basics of Fortran 77, VAX commands, and editing procedures. Fortran topics include program form, arithmetic and algebraic manipulations, the algebra of logic, the handling of character information, the use of subscripted variables, subroutines functions, and direct and sequential files.

*Offered Fall Semester*

## **ME 303 — INTRODUCTION TO MECHANICAL DESIGN**

3 credits

Lectures will cover the principles of engineering graphics, an introduction to modern techniques of engineering design, and how to manage associated CAD activity. Specific topics will include multiview drawings, auxiliary views, sectioning; fastening methods (screws, rivets, welds, etc.); motion/force elements (springs, gears, cams, etc.); dimensioning and tolerancing; electromechanical components; pneumatic and hydraulic components; idea generation; the CADL language; and pictorials, renderings, and solid shading. PREREQUISITE: ME 203.

## **ME 310 — MECHANICS 1 (STATICS)**

3 credits

A thorough introduction to vectors and their operations is presented. Equilibrium of particles and rigid bodies is studied utilizing a vector operational approach. Centroids, friction, distributed forces, and moments of inertia are also investigated. PREREQUISITE: MM 155 and Physics MP 132.

*Offered Fall Semester*

## **ME 320 — CIRCUIT ANALYSIS 1**

4 credits

Terminal characteristics of ideal elements, active and passive. Ohm's Law and Kirchoff's Law. Introduction to network topology, independent variables, loop and nodal analysis. Definition and consequences of the linearity and superposition theorems. Excitation and response, passive equivalent circuits, active equivalent circuits, Thevenin and Norton theorems, inductance and capacitance, VI characteristics, energy relations are covered, as well as first and second order transient response to unit step and unit impulse excitation functions, initial conditions, and natural frequencies. The complex-frequency s-plane. PREREQUISITES: MM 255 and MP 132.

*Offered Fall Semester*

# ENGINEERING TRANSFER

## **ME 322 — INTRODUCTION TO DIGITAL SYSTEMS**

3 credits

An introduction to the theory of digital circuits, stressing general techniques for the analysis and synthesis of combinational and sequential logic systems. **PREREQUISITES:** ME 103/ME 203/ME 208.

*Offered Fall Semester*

## **ME 324 — ELECTRICAL ENGINEERING LAB 1**

1 credit

This experimental work is designed to verify theory discussed in ME 320 and MK 320. Six experiments will be performed on both analog and digital circuits. The experiments involve resistive measurements, Kirchoff's Laws, network theorems, conversion of power and maximum power transfer, inductance and capacitance, first and second order transient response, combinational logic design, and sequential logic design. **CO-REQUISITE:** ME 320.

## **ME 330 — INTRODUCTION TO MATERIALS SCIENCE AND ENGINEERING**

3 credits

A survey of the materials of engineering and the atomic, molecular, and crystal phenomena responsible for their properties. The unifying theme is that the structures of materials determine their properties. Materials considered include alloys, semiconductors, polymers, and ceramics. Homework and tests are designed to build technical vocabulary and facility with tabulated and graphic data in solving basic materials analysis and design problems. **PREREQUISITES:** MC 103, MC 203.

*Offered Fall Semester*

## **ME 335 — MECHANICS OF MATERIALS**

3 credits

Engineering applications of the principles of solid mechanics. Uniaxial and torsional problems are discussed, followed by beam deflections. Plane stress and strain are then presented, followed by stability problems in column design. **PREREQUISITES:** ME 310 and MM 255.

*Offered Spring Semester*

## **ME 340 — INTRODUCTION TO CHEMICAL ENGINEERING**

3 credits

An introduction to the material and energy balances commonly applied to processes in the chemical, petroleum and environmental fields. Also included is a study of the pressure-volume temperature relationships of gases and a brief introduction to selected thermodynamic properties of solids, liquids, and gases. Computer solutions are utilized in selected problems. **PREREQUISITES:** MM 255, MC 203, and ME 208/ME 203.

*Offered Spring Semester*

## **ME 350 — ENGINEERING THERMODYNAMICS 1**

3 credits

A classical presentation of thermodynamics including the first and second laws and their application to batch and flow processes. Ideal gas, real gas, graphical, and tabular relationships among the physical properties of substances which are affected by energy transformations including pressure, temperature, volume, internal energy, enthalpy, and entropy. Heat engines, heat pumps, and carnot cycles. **PREREQUISITES:** MP 232 AND MM 355.

*Offered Spring Semester*

## **ME 410 — MECHANICS 2 (DYNAMICS)**

3 credits

Vector calculus is developed and applied to the solution of kinematic and kinetic problems involving particles and rigid bodies. Different coordinate systems are utilized and kinetics analysis is applied using force balances, the impulse momentum principle, and the work energy theorem. **PREREQUISITE:** Mechanics 1 ME 310.

*Offered Spring Semester*

## **ME 420 — CIRCUIT ANALYSIS 2**

4 credits

Complex numbers, sinusoidal forcing functions, phasors, sinusoidal steady-state. Average real power, reactive power, and RMS values. Exponential forcing function, poles and zeros, in the s-plane, concept of the transfer function and its use in determining the forced response and natural behavior of circuits. Frequency response and resonance, Thevenin and Norton, superposition and maximum power theorems in the frequency domain, trigonometric and exponential Fourier series, and the LaPlace Transform are covered, as well as



magnetic coupling, mutual inductance, and ideal transformers, two-port parameter circuit analysis. PREREQUISITE: ME 320.

*Offered Spring Semester*

### **ME 423 — DIGITAL ELECTRONICS**

3 credits

An introductory look at the physics of the p-n semiconductor junction and analysis of the properties and uses of the junction diode, the bipolar junction transistor (BJT), the field effect transistor (FET), diode transistor logic (DTL), transistor-transistor logic, high threshold logic (HTL), emitter coupled logic, integrated-injection logic, resistor transistor logic, and the CMOS technologies. Although some analog circuits are discussed, the course emphasizes the applications to digital systems. PREREQUISITES: ME 322/MK 320, and ME 320.

*Offered Spring Semester*

### **ME 426 — ELECTRICAL ENGINEERING LAB 2**

1 credit

This experimental work is designed to verify theory discussed in ME 420. Six experiments will be performed on both analog and digital circuits. The experiments involve OP-AMP circuits, D and A conversion circuits, magnitude and phase measurements of impedance, frequency response, resonance, transformers. CO-REQUISITE: ME 420.

### **ME 440 — CHEMICAL ENGINEERING THERMODYNAMICS 1**

3 credits

An introductory course dealing with the fundamental concepts and laws of thermodynamics and of the thermodynamic properties of materials. The major emphasis is on chemical systems. PREREQUISITE: ME 340.

*Offered Spring Semester*

## **English**

### **LD 055 — READING 1 ESL**

3 credits

Reading 1 ESL offers basic reading skills to students for whom English is a second language. Its main objective is to improve pronunciation and vocabulary. This is done by developing visual and auditory recognition and decoding skills used with English sound and words. Some comprehension and study skills will be included in the course.

### **LD 080 — ENGLISH AS A SECOND LANGUAGE LEVEL 1**

3 credits

This course in the acquisition of development of basic language skills provides the student with a guided program in the areas of conversational fluency, reading and listening comprehension, vocabulary development and elementary written expression. Pretests are used to evaluate individual competency and priority.

### **LD 081 — ENGLISH READING COMPREHENSION FOR BILINGUALS LEVEL 1**

3 credits

This course is a review of the basic language skills that are introduced in the LD 080 — English as a Second Language 1 course. It is offered jointly with LD 080.

### **LD 082 — BASIC SKILLS IN CONVERSATION LEVEL 1**

3 credits

This course is a conversation course with emphasis given to oral skills, and conversational fluency. Through a broad range of student-centered activities, students are given the opportunities to practice and reinforce important grammatical structures and patterns.

### **LD 083 — ENGLISH AS A SECOND LANGUAGE LEVEL 2**

3 credits

English as a Second Language Level 2 is an intensive course designed for advanced beginning students of English as a Second Language. Through extensive oral and written drills and exercises, the course offers students an opportunity to master the fundamentals of English grammar and usage.

### **LD 084 — ENGLISH READING COMPREHENSION FOR BILINGUALS LEVEL 2**

3 credits

This course is a review of the language skills introduced in the E.S.L. 2 course. It is offered jointly with LD 083. The focus of the course is on reading and writing development in English through exercises in the texts, dictations, spelling drills, written classwork, and

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homework assignments. Learning to write one paragraph well is emphasized in this course. Recognition and implementation of the title, topic sentence, and good paragraph development and form are essential to complete the course objectives.

### **LD 085 — BASIC SKILLS IN CONVERSATION LEVEL 2**

3 credits

This course is an advanced conversation course with emphasis on oral skills. English Conversation 2 is a three-credit course designed for advanced beginning students of English as a Second Language. Through a broad range of student-centered activities, students are given an opportunity to practice and reinforce important grammatical structures and patterns. While these activities take various forms — role-plays, extended guided conversations, questions about the students' real world, and topics for classroom discussion or debate — they are intended to engage actively the students in meaningful conversation based upon their interests, backgrounds, and imagination.

**PREREQUISITES:** To enter ESL 2, ERCB 2, and Basic Skills Conversation 2, students must either have successfully completed ESL 1, ERCB 1, and Basic Skills Conversation 1, or have scored at the appropriate level on the placement examinations of the English as a Second Language program. English Conversation 2 is a complement to these courses and is generally taken simultaneously.

### **LD 086 — ENGLISH AS A SECOND LANGUAGE LEVEL 3**

3 credits

This is a grammar course. It is assumed that the students who are enrolled in it have successfully completed LD 080 through LD 085 inclusively, or have been tested and placed into the Level 3 curriculum. The emphasis will be on verb forms, mechanics, and syntactical structures.

### **LD 087 — ENGLISH READING COMPREHENSION FOR BILINGUALS (ERCB)**

3 credits

This is a basic reading course to develop vocabulary, comprehension, and critical thinking. It is offered jointly with LD 086. Students will be required to read text material which covers a variety of cultural material. In addition, students will be required to do outside readings from the newspaper and a fiction or non-fiction book, and write reports. Students will demonstrate their understanding of these materials by oral and written discussions.

### **LD 088 — BASIC WRITING SKILLS 1**

3 credits

Course is designed to meet the needs of students who have attained proficiency in English. It will provide practice in writing paragraphs and essays. The emphasis will be on writing skills, with an exit essay required.

### **LD 089 — ESL READING**

3 credits

This course reviews phonics and pronunciation as well as basic English vocabulary and literal comprehension.

### **LD 099 — REVIEW FOR COLLEGE WRITING**

3 credits

This course provides a review of basic English skills in grammar, sentence structure, paragraphing, and essay development to prepare students for college-level writing. The course, intended for students who have had difficulty with written English, provides preparation for LE 100, but it cannot be counted for graduation credit.

*Offered Fall and Spring Semesters*

### **LD 090 — READING**

3 credits

Developmental Reading provides instruction to help students meet the demands of sophisticated college reading assignments. The reading program is designed to group students into appropriate classes according to ability after proper diagnostic testing. The classes will provide students with the tools needed to reach their educational goals. Techniques for success and skills are developed that can be transferred to all types of academic reading, for being a competent reader is essential to being well-educated. **NOTE:** Once a student has successfully completed one level of reading, he or she may enter a reading course at the next level.

**LD 091 — READING LEVEL 1**

3 credits

Reading 1 offers practice in basic reading skills. The main objective is to improve comprehension on a literal level. Vocabulary and rate work will be included to meet individual student needs as the course progresses.

*Offered Fall and Spring Semesters*

**LD 092 — READING LEVEL 2**

3 credits

Reading 2 offers practice in improving comprehension, vocabulary, and rate. It is a continuation of the fundamental work in Reading 1 and is intended to help students read textbooks and non-academic material with greater ease and understanding.

*Offered Fall and Spring Semesters*

**LD 093 — BASIC WRITING SKILLS 2**

3 credits

This course is a continuation of LD 088. Classes meet five times a week plus writing lab time. Basic sentence structure, punctuation, and essay development are emphasized to provide E.S.L. students needed practice in written communication to prepare for Composition 1. PREREQUISITE: LD 088.

**LD 094 — SPEECH FOR FOREIGN STUDENTS: E.S.L.**

3 credits

This course will give E.S.L. students the practice needed to communicate orally. Pronunciation, organization of ideas, creativity, presentation, and self-evaluation will be developed. Speeches, news reports, discussions, and demonstrations will be some of the kinds of oral communication in which students will take part. PREREQUISITE: E.S.L. 3 course or permission of instructor (Speech therapist lab time required for students who need speech therapy; meets three times a week).

**LE 105 — READING LEVEL 3**

3 credits

Reading 3 is an advanced reading course. Vocabulary work includes extensive word part study. Comprehension selections include questions on the literal, interpretive and evaluative levels, and rate work demands that students demonstrate an increase in speed while maintaining high comprehension scores. Attention is also given to preparation for standardized tests including the Scholastic Aptitude Test.

*Offered Fall and Spring Semesters*

**LE 100 — ENGLISH COMPOSITION 1**

3 credits

The objective of this course is to improve the student's ability to communicate effectively in writing. Areas covered in this course will include the major rhetorical modes, effective construction of paragraphs and essays, and the documented research paper.

*Offered Fall and Spring Semesters*

**LE 200 — ENGLISH COMPOSITION 2: AN INTRODUCTION TO LITERATURE**

3 credits

This course involves the close reading and class discussion of fiction, poetry and plays, mostly modern, and essay assignments involving writing about literature. Emphasis is on the role of individual literary works as expressions of universal human experience. PREREQUISITE: LE 100.

*Offered Fall and Spring Semesters*

**LE 201 — BUSINESS ENGLISH**

3 credits

This course is designed to prepare business students to meet the requirements of writing all kinds of communications in the business world, emphasizing the construction of proper business letters, reports, resumes, and memoranda. Students develop an understanding of correct style, form, and tone and gain an ability to write clear and concise business communications. PREREQUISITE: LE 100

*Offered Fall and Spring Semesters*

**LE 202 — TECHNICAL REPORT WRITING**

3 credits

Instruction has been organized to emphasize methods involved in the writing process. Special emphasis has been placed on the factors which the report writer must consider and the processes he must follow in writing a report. The student will become acquainted with the techniques of analyzing a writing situation, methods of investigating the problem, organizing the report and preparing the final copy. PREREQUISITE: LE 100.

*Offered Fall and Spring Semesters*



## **LE 203 — FUNDAMENTALS OF SPEECH**

3 credits

Everyone must communicate in life, and this course is about communicating in personal affairs, employment, and society. Students will write and present talks about a variety of topics and situations. Being educated means having something to say; this course will help you say it.

*Offered Fall and Spring Semester*

## **LE 300 — LITERATURE OF THE WESTERN WORLD: BC TO 17TH CENTURY**

3 credits

This course examines literary classics of Western culture to develop both an appreciation of their intrinsic worth and an awareness of their significance in the history of ideas and of literature. Selections from Biblical, Classical, Medieval, and Renaissance periods are read and discussed. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

*Offered Fall and Spring Semesters*

## **LE 301 — BRITISH LITERATURE: ANGLO-SAXON TO NEOCLASSICAL PERIODS**

3 credits

Readings in English literature from the Anglo-Saxon to the Neoclassical periods are studied with attention to their literary content and style. The literary works are also examined as representations of major literary and intellectual movements in Britain. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

*Offered Fall and Spring Semesters*

## **LE 302 — AMERICAN LITERATURE: 1620-1860**

3 credits

The growth of American Literature from the Colonial period to the Civil War reflects major developments in American thought, beliefs, and values. Such writers as Bradford, Bradstreet, Edwards, Franklin, Poe, Hawthorne, Melville, Emerson and Thoreau will be the basis of our close, critical reading and discussion, representing our literary and intellectual heritage. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

*Offered Fall Semester*

## **LE 304 — INTRODUCTION TO AFRICAN-AMERICAN LITERATURE 1**

3 credits

This course is designed to accomplish two aims. First, there will be a concentrated study of the writings of African Americans, including the oral tradition. In addition, there will be readings in poetry and contemporary fiction. Secondly, this course will focus on developing an awareness of the unique quality of African life and culture, as well as of its contributions to world literature.

*Offered Fall Semester*

## **LE 305 — CHILDREN'S LITERATURE**

3 credits

Children's Literature is an elective one-semester survey course. The material includes the study of the history of children's literature; juvenile novels for children 8-12; picture books, their subject matter, and illustrative techniques, for children ages 3-6; folktales and literary fairy tales; and children's poetry. The emphasis is on American publications. **PREREQUISITE:** LE 100 or permission of instructor.

*Offered Fall and Spring Semester*

## **LE 308 — WOMEN IN LITERATURE**

3 credits

This course will focus on the roles, myths, and stereotypes of women in different historical periods, and relate these roles to the social structure, the status, and function of women in the particular social setting in which the literary works were written. The study will enable us to discover to what extent the image of women in literature reflects reality, and to what extent it is an ideal encouraged to keep women in a particular role. Works by Virginia Woolf, Kate Chopin, and Anne Sexton are included readings. **PREREQUISITE:** LE 100; **RECOMMENDED:** LE 200. Honors component available.

*Offered Spring Semester*

**LE 309 — INTRODUCTION TO JOURNALISM**

3 credits

An introductory course designed to explore the overall area of journalism as related to producing a weekly student newspaper. The class is conducted as a workshop with instruction focused on news reporting, feature writing, and page layout.

*Offered Fall and Spring Semesters*

**LE 310-312 — COLLEGE THEATER WORKSHOP 1, 2, & 3**

1, 2, or 3 credits

A workshop in all respects of theatrical production. Participation in college theater productions is required of all students. It may be taken by qualified students, faculty, and staff as a co-curricular activity with or without credit. Field trips to theaters and conventions and speakers from all areas of the theater will be included.

*Offered Fall and Spring Semesters*

**LE 400 — LITERATURE OF THE WESTERN WORLD:  
18TH TO 20TH CENTURIES**

3 credits

This course examines significant literary works from the 18th century to the modern era, to develop both an appreciation of their intrinsic worth and an awareness of their significance in the history of ideas and of literature. Selections from the prose, poetry, and drama of these periods are read and discussed. PREREQUISITE: LE 100; RECOMMENDED: LE 200. Honors component available.

*Offered Fall and Spring Semester*

**LE 401 — ENGLISH LITERATURE 2: ROMANTICISM TO MODERNISM**

3 credits

This course is a continuation of English Literature 1 and consists of readings from the Romantic period to the twentieth century, especially the works of Wordsworth and Coleridge, Byron, Keats and Shelley, Tennyson and Browning, and Eliot and Joyce. The works are studied from the same perspective and with the same emphasis as in LE 301. Honors component available.

*Offered Spring Semester*

**LE 402 — AMERICAN LITERATURE: 1860-PRESENT**

3 credits

Readings of American fiction, poetry, and drama from the Civil War to the present, ranging from Whitman, Dickinson, Twain, James, to Frost, Fitzgerald, Hemingway, Faulkner and several contemporary writers. This course continues the survey of American literature from the same critical perspective as LE 302. PREREQUISITE: LE 100; RECOMMENDED: LE 200. Honors component available.

*Offered Spring Semester*

**LE 408 — WOMEN IN LITERATURE 2**

3 credits

This course will serve as a natural progression of the basic survey course in Women in Literature. However, rather than focusing on short stories by women, Women in Literature 2 will examine women's short novels, plays, essays, and poetry. The readings will include: three Classic Greek plays, a forgotten 19th century American utopian novel, two 20th century novels, and a contemporary collection of essays and poetry. PREREQUISITE: An interest in the analysis and discussion of women's writing/issues, LE 100. RECOMMENDED: LE 200. Honors component available.

**LE 900 — DIRECTED STUDY IN ENGLISH**

Variable Credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairpersons. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

## Environmental Technology

### HE 110 — ENVIRONMENTAL STUDIES

3 credits

An introduction to environmental pollution and its effects on man and other living organisms. It includes discussions of sciences of the atmosphere, water bodies, geology and energy; pollution of the air, land, and water; disease transmission and food production. The course meets for three hours of class each week. PREREQUISITE: None.

*Offered Fall Semester*

### HE 210 — MUNICIPAL WASTEWATER PLANT OPERATIONS 1

3 credits

An investigation of the physical and chemical operations utilized in the treatment of liquid wastes. It includes such topics as theory of water pollution, collection systems, safety, odor control, disinfection, phosphorus removal, screening, grit removal and clarification. The course meets for three hours of class each week. PREREQUISITES: None.

*Offered Spring Semester*

### HE 230 — ENVIRONMENTAL PRACTICUM

3 credits

The practicum is supervised work experience in an environmental field for 192 hours. Typical work experience includes: wastewater treatment plant operations; maintenance and lab work in municipal or industrial wastewater facilities; water treatment plant and water systems operations; maintenance, installation, and lab work; and hazardous waste sampling, analysis, clean-up, processing, and regulatory compliance. Practicum sites may include: municipal wastewater plants, industrial wastewater plants, public or private water treatment systems, environmental consulting firms, hazardous waste contractors, environmental laboratories, and regulatory agencies.

*Offered Summer Session*

### HE 315 — FACILITIES MAINTENANCE AND INSTRUMENTATION

3 credits

This course is a study of equipment maintenance and instrumentation as it pertains to industrial/municipal wastewater, water treatment facilities, and hazardous waste situations. Maintenance topics include: bearings, valves, pipe systems, compressors, pumps, seals, couplings, variable drives, and lubrication. Instrument topics include: principles of measurement of flow, temperature, pressure and liquid level. Demonstrations will be utilized to visualize the lecture material. The course meets three hours each week. PREREQUISITE: None.

*Offered Fall Semester*

### HE 321 — FUNDAMENTALS OF INDUSTRIAL HYGIENE

4 credits

A study of the interaction between work place chemical, radiological, and physical exposures to human health. Topics include: anatomy of the lungs, skin, eyes and ears; hazards including dust, solvents, flammables, noise, ionizing and non-ionizing radiation; criteria for health exposure, fire hazards, and physical hazards. This course meets for three hours of class and three hours of lab each week. PREREQUISITES: MC 101 and MC 201, MM 132 or permission of instructor.

*Offered Spring Semester*

### HE 325 — OCCUPATIONAL SAFETY

3 credits

A course of study intended to provide instruction on the Occupational Health and Safety Administration (OSHA) general industry standards 29 CFR 1910 to entry-level participants. Primary topics include the OSHA Act, introduction to the OSHA standards, OSHA inspections, record keeping, and hazard communication. Study of the standard subparts include such topics as personal protective equipment, material handling, electrical hazards, machine guarding, hearing conservation, walking and working surfaces, and means of egress. Particular attention is given to the reading and application of the OSHA standards. This course meets for three classes per week. PREREQUISITES: None.

*Offered Fall Semester*

### HE 330 — MUNICIPAL WASTEWATER PLANT OPERATIONS 2

3 credits

A study of biological processes utilized to treat liquid wastes including trickling filters, activated sludge, and rotating biological contactors and solids processing including thickening,



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conditioning, stabilization, incineration, and solids utilization. Field trips will reinforce lectures. The course meets for two hours of class and three hours of lab each week. **PREREQUISITE:** HE 210 or permission of instructor.

*Offered Spring Semester*

### **HE 340 — TOXICOLOGY**

3 credits

This course presents the fundamentals of toxicology as applied to environmental and occupational exposures. A thorough examination of the routes of exposure, effects on target organs, and dose response is presented. Toxic agents including pesticides, metals, solvents, and radioactive materials; carcinogens, mutagens, and teratogens; the application of the principles of toxicology and the basics of risk assessment are included. **PREREQUISITES:** MC 101 and MB 102 or permission of instructor.

*Offered Fall Semester*

### **HE 410 — WATER AND INDUSTRIAL WASTEWATER TREATMENT**

3 credits

Unit processes including aeration, coagulation-flocculation, sedimentation, softening, disinfection, ion exchange, fluoridation, carbon absorption, filtration, and chemical oxidation/reduction are studied. Local industries and their pollution sources, and the problems in drinking water supplies are covered as applicable to the above unit processes. Field trips will augment the lecture material. This course meets for two hours of class and three hours of lab each week. **PREREQUISITE:** Chemistry or permission of instructor.

*Offered Spring Semester*

### **HE 435 — SAFETY RISK MANAGEMENT**

3 credits

A study of methods used to control losses including financial, property, production, and worker from occupational and environmental accidents. Hazard identification, control methods, data collection, and cost analysis are applied to the principles of loss control. Practical applications of work place and hazardous waste site safety and health plans, job safety analysis, accident investigation techniques, and accident prevention programs are included.

*Offered Spring Semester*

### **HE 440 — HAZARDOUS MATERIALS AND WASTE MANAGEMENT 1**

3 credits

A study of RCRA regulations for small quantity generators. A survey of regulations for the following: RCRA for large quantity generators, underground storage tanks, hazard communication, and community right-to-know. This course meets for three class hours per week. **PREREQUISITE:** None.

### **HE 441 — HAZARDOUS MATERIALS AND WASTE MANAGEMENT 2**

3 credits

A study of the procedures for working in a hazardous waste site. Included are safety and health program, medical surveillance, decontamination, site characterization and analysis, protective clothing, monitoring equipment, site control work, documentation, emergency response, engineering and administrative control to reduce exposure, and site safety principles. This course matches the description of 29 CFR 1910.120 for Hazardous Waste Site Worker Training. The course meets for two hours of class and three hours of lab each week. Medical examination required for students who desire certification.

**Executive Office Administration**  
(See Office Administration)

**Finance**  
(See Business Administration)

## Fine Arts

### Option to Liberal Arts Transfer

**LA 140 — ART HISTORY: PREHISTORIC TO GOTHIC**

3 credits

Art History is a survey of the major visual arts of the western world: architecture, painting and sculpture of the Paleolithic Era, Ancient Egypt and Mesopotamia, the Aegean, Greece and Rome, Early Christianity and Islam, the Romanesque and Gothic periods. The course is designed to help the student to understand the impulse behind the key monuments in the history of western art. Slide-lecture instruction, using Janson's *History of Art*. Three in-class hours weekly. **PREREQUISITE:** None. Honors component available.

*Offered Fall Semester***LA 142 — PAINTING 1**

3 credits

Easel painting in oils. Based on elementary understanding of the physical properties of oil medium, the course will emphasize the individual expression within the framework of instruction in technical development, principles of pictorial composition and elements of visual representation. The main course objective is to increase students' sophistication toward aesthetic concerns and pictorial content while developing technical skills. No previous art background is required. Five in-class hours weekly.

*Offered Fall and Spring Semesters***LA 143 — PRINTMAKING 1**

3 credits

Basic study of materials, techniques and aesthetic consideration peculiar to relief printmaking. Includes a special segment on producing monotypes and monoprints from intaglio plates and woodblocks. Students will create a series of prints using these techniques and will develop an understanding of the printmaking process in general by studying historical and contemporary prints. No previous art background is required. Five in-class hours weekly.

*Offered Spring Semester only***LA 145 — FIGURE DRAWING**

3 credits

The primary focus of this course is the study of the human figure as a vehicle for clarifying both perception and expression. A primary course objective is the acquisition by the student of a sense of evaluative process inherent in making and viewing art works in various drawing media. Basic drawing helpful, but not a prerequisite. Five in-class hours weekly.

*Offered Spring Semester***LA 146 — DESIGN: INTRODUCTION TO ART**

3 credits

A studio workshop course which teaches the basic concepts in two-dimensional design, providing the foundation needed to understand and produce significant drawings, paintings, prints, and graphic expressions. Working in collage, students complete projects emphasizing the plastic elements individually (line, shape, texture, etc.) and the aesthetic principles (rhythm, balance, unity, etc.) Main objectives of the course include establishment of a sophisticated art vocabulary, understanding of color theory, and the perception of spatial phenomena in their varied forms on two-dimensional surfaces. No previous art background is required. Five in-class hours weekly.

*Offered Spring Semester***LA 147 — BASIC DRAWING**

3 credits

An introduction to a variety of drawing materials, techniques, and concepts. Emphasis is placed on developing each student's individual drawing strengths and making the student critically aware of the aesthetic soundness of a wide range of drawings, as each fulfills a different, expressive impulse. No previous art background is required. Five in-class hours weekly.

*Offered Fall and Spring Semesters***LA 149 — DRAWING COMPOSITION**

3 credits

Drawing will be approached as a basis of composition and training in observation. Emphasis will be placed on developing perceptual awareness and critical self-evaluation as means toward growth in one's abilities in visual self-expression. Students will be encour-

aged to explore areas of individual strengths and interests, using the figure as a primary subject. Five (5) in-class hours weekly. PREREQUISITE: LA 147.

*Offered Spring Semester*

## **LA 240 — ART HISTORY: RENAISSANCE AND BAROQUE**

3 credits

A survey course in the major visual art expressions of Western man, covering the Late Gothic period north of the Alps, the Renaissance, Baroque and Rococo art of Italy, Germany, France, Spain, Flanders, Holland, and England. Emphasis is placed upon understanding the impulse behind man's artistic expression; the link between works of art and the culture in which they are produced. Slide-lecture instructions, using Janson's *History of Art*. Art History 1 is not a prerequisite. Three in-class hours weekly. Honors component available.

*Offered Spring Semester*

## **LA 242 — PAINTING 2**

3 credits

Painting 2 is a continuation of Painting 1 offering the student the opportunity to explore a variety of media and techniques in painting. Students must explore a variety of spatial concepts used by the painter, working the problems presented as the course content into their own framework of artistic direction. PREREQUISITE: Painting 1 or permission of the instructor. Five in-class hours weekly.

*Offered Fall and Spring Semesters*

## **LA 243 — PRINTMAKING 2**

3 credits

A continuation of Printmaking 1 with more advanced problems in technique and color process. Emphasis is placed on the development of individual direction. Five in-class hours weekly. PREREQUISITE: Printmaking 1 or permission.

*Offered Spring Semester*

## **LA 441; LA 442; LA 443 — DIRECTED STUDY IN ART**

variable credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairpersons, the Academic Dean, and the Registrar. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

*Offered Fall and Spring Semesters*

# Foreign Languages

## SPANISH

## **LF 121 — ELEMENTARY SPANISH 1**

3 credits

This course introduces the student to the basic grammatical structure of the Spanish language, with emphasis on pronunciation and Latin American culture. Intense oral drills review vocabulary used in real life situations and cultural themes connected with the Hispanic world. A contrast between English and Spanish and the use of cognates increases comprehension and vocabulary. PREREQUISITES: Clearance for Comp. 1 in the English Placement Test or permission of instructor.

*Offered Fall and Spring Semesters*

## **LF 122 — CONVERSATIONAL SPANISH**

3 credits

The focus of this course is on speaking and understanding the contemporary idiomatic patterns of the native speaker. Special attention is given to pronunciation and simple conversational patterns. Contemporary themes are emphasized, giving police, firemen, medical personnel and other interested groups the ability to express themselves in Spanish. PREREQUISITE: Comp. 1 status or permission of instructor.

*Offered Fall and Spring Semesters*

## **LF 221 — ELEMENTARY SPANISH 2**

3 credits

This is a continuation of Elementary Spanish 1, with emphasis on the four basic skills necessary for the mastery of a foreign language: listening, speaking, reading, and writing. More



## FOREIGN LANGUAGES

sophisticated grammatical and linguistic concepts are introduced and discussed, using the Spanish language as a tool for communication. Students gain knowledge of the contemporary thought of Hispanics in the United States and in the Hispanic world. Intense oral drills and practical vocabulary. **PREREQUISITE:** LF 121 or equivalent.

*Offered Fall and Spring Semesters*

## General Business (See Business Administration)

## General Business/Transfer Compact Option (See Business Administration)

## Graphics Arts Technology

### **GA 120 — TYPOGRAPHY**

3 credits

Typography is the art and process of working with type. This course is designed to introduce the student to the origins of type through state-of-the-art computer typesetting procedures. The student will also be introduced to basic paste-up procedures, including the use of various graphic arts tools and materials, as well as equipment such as the Macintosh computer. The laboratory projects, which are self-paced and modular, are primarily technical and require a minimum of creativity. **PREREQUISITE:** None.

*Offered Fall Semester*

### **GA 131 — PRINTING TECHNOLOGY**

3 credits

This basic core course is designed to introduce students to the printing industry. Through a series of lectures the story of printing and communications is told chronologically from man's first attempts at communication through the development of mass communication printing systems, to a vision of what the world of printing might be like in the future. Assignments are designed to challenge the student's logical understanding of the purpose of mass communications through various printing processes in today's society.

*Offered Fall Semester*

### **GA 135 — INTRODUCTION TO THE GRAPHIC ARTS COMPUTER**

3 credits

This course is a lecture and laboratory course which will introduce the student to the world of the graphic arts computer. It will concentrate on basic computer functions as used in graphic arts applications, such as clicking, selecting type, dealing with interface, disk and filing operations, printing and filing management. The class will be broken down into small laboratory groups where individualized instruction will be given. **PREREQUISITE:** None.

*Offered Fall Semester*

### **GA 210 — BASIC IMAGE ASSEMBLY**

3 credits

This basic course is a lecture and laboratory presentation, with the purpose of preparing the student to precisely position film negatives onto a base material for the eventual conversion into a printing image carrier. The lecture portion will include the basic requirements of reproduction, the equipment where this reproduction will take place, the requirements of this reproduction equipment, materials and techniques used in the process, combined with a rigid adherence to precise measurement and positioning. The laboratory portion will start with the basics of image assembly and become increasingly more sophisticated and demanding, preparing students for employment as entry level assemblers ("strippers" as they are called in the industry). **PREREQUISITE:** None.

*Offered Spring Semester*

## **GA 220 — LAYOUT**

3 credits

The material in this course is a continuation of GA 120. It is designed to further the student's skills in type, layout, and art. The student will be introduced to the history of layout from its origins through contemporary commercial art trends. The important works of famous artists, designers, and inventors will be discussed. The student will learn to recognize good paste-up procedures through class assignments. In the laboratory part of this course, layout and typesetting skills will be further developed, primarily on the Macintosh computer. **PREREQUISITE:** GA 120.

*Offered Spring Semester*

## **GA 240 — DESKTOP PUBLISHING TYPOGRAPHY**

3 credits

This course is a lecture and laboratory course which will introduce the student to the setting of type on the desktop computer with the current programs used in the industry. It will emphasize the integration of type into the design as well as the controls that the typesetter has over the process. On completion of this course, the student will have developed the basic skills required to effectively set type with most of the desktop equipment used in the industry. **PREREQUISITE:** GA 135.

*Offered Spring Semester*

## **GA 320 — ADVANCED IMAGE ASSEMBLY**

3 credits

Advanced Image Assembly is a lecture and laboratory course which completes the two-course series on pre-press image preparation, commonly known in the industry as "stripping". The lecture portion of the course will provide a theoretical foundation for the sophisticated and complex techniques involved in contemporary image assembly. The subject matter discussed in lecture will cover a detailed examination of press and bindery requirements, an in-depth survey of tools and materials, and a comprehensive study of photographic and electronic procedures. The laboratory portion of the course will be comprised of increasingly more difficult and complex assignments ranging from simple color image assembly to multiple complementary imaging; from simple trapping techniques to "fake" color separation. **PREREQUISITE:** GA 210.

*Offered Fall Semester*

## **GA 350 — GRAPHIC DESIGN**

3 credits

This course introduces the student to the coordination of visual elements which is essential for good advertising design. The student's creativity will be utilized in the preparation of mechanical art which will demonstrate the advanced methods used in commercial art studios. Among the topics taught in this course are the arrangement of headlines, copy blocks, photographs, art work, logotypes, and borders, as well as advanced paste-up and comping procedures. This information will serve the graphic arts professional, be it the buyer of art preparation, the illustrator, the typesetter, the photopreparation operator, or the printer. The laboratory portion of this course will include the progression from concepts to mechanical image preparation, including the progression from concepts to mechanical image preparation, including basic photographic techniques and multicolored "camera-ready" techniques. **PREREQUISITES:** GA 120 and GA 220.

*Offered Fall Semester*

## **GA 360 — OFFSET PRESSWORK**

3 credits

This course will familiarize the student with the theory and operation of the offset lithographic printing press. The technical components of these presses will be detailed emphasizing the advantages and limitations of the process, enabling the student to maximize and enhance his or her design capabilities. Printing substrates will be presented in detail along with color matching systems. Laboratory exercises will familiarize the student with the operation of small offset duplicators and larger offset presses.

*Offered Fall Semester*

## **GA 371 — PRINTSHOP MANAGEMENT**

3 credits

This course will provide an introduction to the student of the management functions of the graphic arts industry. The principles of controlling finances, personnel, costs, purchasing, inventory, production, and growth will be stressed. The case study approach will be used to reinforce the theories presented in the classroom, building a framework to aid in making the

# GRAPHIC ARTS TECHNOLOGY

many decisions which are the essence of good graphic arts management procedures. PREREQUISITE: GA 131.

*Offered Fall Semester*

## **GA 397 — GRAPHIC ARTS COOPERATIVE EDUCATION**

3 credits

Graphic Arts Cooperative Education is a course which enables students to achieve work experience in assignments which are directly related to their major field of study. It provides valuable first-hand experience in the field, wages earned to defray most college expenses, and work experience to give participating students "paid experience" references for future employment opportunities. PREREQUISITE: Senior Standing; GA 120, GA 210, and GA 220.

## **GA 410 — CHEMISTRY OF LITHOGRAPHY**

4 credits

Topics in chemistry relating to Graphic Arts including photography and photographic processes, colors, inks, and printing. Laboratory. PREREQUISITE: MC 100 or MC 101.

*Offered Spring Semester*

## **GA 420 — COLOR REPRODUCTION PROCESSES**

3 credits

This is a lecture course which will discuss the reproduction of color with graphic arts processes. As a majority of contemporary printing is now in full color, it is very important that the graphic arts professional have a good theoretical and practical understanding of color reproduction. The course will begin with a review of light and color, and proceed through contemporary color processes. Among the topics discussed are color standardization, color viewing, quality evaluation, proofing, electronic separation techniques, inks, and printing requirements.

*Offered Spring Semester*

## **GA 421 — REPRODUCTION PHOTOGRAPHY**

3 credits

Reproduction Photography is a course on the photographic technology required for printing preparation. It ranges in scope from basic line photography through halftone conversion of continuous tone materials, to electronic scanner color separation. The course is organized into two weekly lectures where the theories of graphic reproduction photography are discussed, and a weekly laboratory session with experiments and demonstrations in the practical applications of this photographic discipline. The aim of this course is to provide students with a working knowledge of the materials, processes, production techniques, and methods of evaluation for graphic arts photography. PREREQUISITE: MP 255.

*Offered Spring Semester*

## **GA 445 — COMPUTERIZED GRAPHIC DESIGN**

3 credits

Computerized Graphic Design is the cumulative commercial art course in the Graphic Arts Technology program. It offers a continuation, on an advanced level, of many of the skills developed in previous commercial art courses, including typesetting commands, layout, paste-up methods, and computerized desktop publishing on the Macintosh. The course progresses from material covered in the Graphic Design course (GA 350) through advanced computer methods using current design and imaging software. Students will also learn background information about the Macintosh computer. Laboratory instruction will be self-paced tutorials, and will include start-to-finish procedures for multi-paged, multi-colored design jobs. The student will assemble a final portfolio presentation suitable for professional graphic arts employment. PREREQUISITES: GA 120, GA 220, GA 350.

*Offered Spring Semester.*

## **GA 461 — ADVANCED DESKTOP PUBLISHING**

3 credits

This is a lecture and laboratory course which is designed to develop advanced skills and productivity with the current computer programs used in the graphic arts industry. The techniques that will be discussed will include the steps in producing a project, organization and planning techniques, and the combining of computer hardware and software. The laboratory portion of this course will have many projects to develop a sense of workmanship. PREREQUISITE: GA 240.

*Offered Spring Semester*



**GA 497 — GRAPHIC ARTS COOPERATIVE EDUCATION**

3 credits

Graphic Arts Cooperative Education is a course which enables students to achieve work experience in assignments which are directly related to their major field of study. It provides valuable first-hand experience in the field, wages earned to defray most college expenses, and work experience to give participating students "paid experience" reference for future employment opportunities. **PREREQUISITES:** Senior Standing; GA 120, GA 210, and GA 220.

*Offered Spring Semester.*

## Health Careers Community

**AK 099, AK 099L — HEALTH DIRECTIONS SEMINAR 1**

4 credits

The Health Directions Seminar 1 is designed as a developmental course for students planning to enter an allied health career. Using basic concepts of health and wellness as a focus, students will develop and strengthen study skills necessary for success in the higher level allied health courses. Weekly lessons in medical terminology will assist students to develop and improve their medical vocabulary. In addition, the weekly laboratory component of this course provides the student an opportunity for career exploration. All of the allied health career programs are introduced and explored in detail. This course utilizes a multimedia approach to learning. A variety of computer-driven audio and visual tools (cassettes, video tapes, and laser discs) will enhance the traditional lecture experience. Class discussion and small group participation are an integral part of this course.

**AK 104 — HEALTH DIRECTIONS PRACTICUM**

3 credits

This course is designed for Pre-Health students who need in-depth career exploration. Planned observations in the 12 allied health programs, individual meetings with the instructor, and a research paper provide the student with the information necessary to choose his or her career direction. The observations will be within the laboratories of STCC health programs and affiliated health care facilities. This course meets by arrangement.

**AK 105 — HEALTH DIRECTIONS SEMINAR 2**

3 credits

Health Directions Seminar 2 is designed to introduce students to basic concepts of pathophysiology. Emphasis is placed on medical terminology for basic structures and functions of each of the body systems. This course utilizes a multimedia approach to learning. A variety of computer-driven audio and visual tools will enhance the traditional lecture experience.

**AK 301 — HEALTH CAREER GUIDANCE SEMINAR 1**

1 credit

A group guidance approach to assist students to identify personal/professional concerns which might block their learning, and to facilitate referrals to meet these needs. Through the medium of an independent contract for learning, the student will negotiate and implement a role modeling activity with the Health Care Community to serve as a motivating factor for the pre-health students. (First semester, Health/Human Services/Nursing curriculum.)

**AK 302 — HEALTH CAREER GUIDANCE SEMINAR 2**

1 credit

An extension of AK 301. (Second semester. Health/Human Services/Nursing curriculum.)

**AK 303 — HEALTH CAREER GUIDANCE SEMINAR 3**

1 credit

An extension of AK 302. (Third semester. Health/Human Services/Nursing curriculum.)

**AK 304 — HEALTH CAREER GUIDANCE SEMINAR 4**

1 credit

An extension of AK 303. (Fourth semester. Health/Human Services/Nursing curriculum.)

# History

## **NH 100 — SURVEY OF EARLY WESTERN CIVILIZATION**

3 credits

Origin and development of Western Civilization beginning with the classical civilizations of Greece and Rome, continuing through early Christianity and the Middle Ages, and concluding with the Renaissance and Reformation.

*Offered Fall and Spring Semesters*

## **NH 110 — SURVEY OF EARLY U.S. HISTORY**

3 credits

History of the United States from the Colonial period to the end of the Civil War and Reconstruction. A topical approach is followed within a chronological framework centering on the colonial origins of American society, its separation from England, the subsequent process of nation building and the development of the Civil War during the Ante-Bellum period.

*Offered Fall and Spring Semesters*

## **NH 200 — SURVEY OF MODERN WESTERN CIVILIZATION**

3 credits

Modern Western Civilization from the end of the Middle Ages to the present. Begins with Seventeenth Century Europe and discusses the beginnings of modern science; the Enlightenment and the political revolutions in England, America, and France; the industrial and intellectual revolutions of the Nineteenth Century; the World Wars of the Twentieth Century and developments which follow in the post-war period. **PREREQUISITE:** None. Honors component available.

*Offered Fall and Spring Semesters*

## **NH 210 — SURVEY OF MODERN U.S. HISTORY**

3 credits

History of the United States from the end of the Reconstruction period to the present. Consideration will be given to the impact of the Industrial Revolution on Late Nineteenth Century America and the influence of war and reform on the nation during the Twentieth Century. A social-cultural and new political approach will be utilized. **PREREQUISITE:** None.

*Offered Fall and Spring Semester*

## **NH 300 — HISTORY OF CIVILIZATION TO 1650**

3 credits

This course follows the development of China, Japan, India, Africa, Eastern Europe, and South America from the Stone Age to 1650. It will examine scientific, economic, social, and cultural trends, with particular emphasis on the influence of religion and philosophy that is not based on the Judeo-Christian ethic.

## **NH 320 — INTRODUCTION TO AFRICAN-AMERICAN HISTORY**

3 credits

The purpose of this course is to introduce the student to the history of the African-American in the United States. Beginning with an exploration of the African heritage, the course will explore the social, economic, and political role of the African-Americans from the colonial period through the Civil Rights Movement of the 1960's. The course will also examine the development of black culture in the United States, the diversity of this culture, and its contribution to American culture in general.

## **NH 400 — HISTORY OF CIVILIZATION SINCE 1650**

3 credits

This course follows the development of China, Japan, India, Africa, Eastern Europe, and South America from 1650 to the present. It will examine scientific, economic, social, and cultural trends with particular emphasis on the influence of religion and philosophy that is not based on the Judeo-Christian ethic.

## **NH 425 — WOMEN IN HISTORY**

3 credits

This course will trace the history of women in America. It will focus on their economic, political, and social roles, as America moved from being an agrarian society to an industrial one. The course will also examine the historical role of women after World War I, and the influence of the civil rights movement on the late 20th century women's movement. Primary sources will be used in this course. **PREREQUISITE:** None.

## **NH 900 — DIRECTED STUDY IN HISTORY**

variable credit

Semester hours credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

## Honors Colloquia

### LH 501 — HUMANITIES COLLOQUIUM: ARTS IN ACTION

3 credits

The Arts in Action colloquium is designed to familiarize the student with major trends throughout history in the area of fine arts as well as the performing arts. One of the major objectives is to illustrate to the student how the arts contribute *actively* to our daily lives, how they give us a sense of our past, how they provide us with an enlightened sense of self, and how they enable us to understand the ongoing complexities of the human condition. This colloquium will focus on such areas as: theater, music, dance, painting, and sculpture. Ideally, the Arts in Action colloquium will blend in-class lectures, readings, slides, tapes, and films with actual attendance at artistic events in the surrounding communities.

*Offered Spring Semester*

### LH 502 — LIBRARY RESEARCH COLLOQUIUM

1 credit

A one-credit course designed for honors students to explore methods and means of finding information. There will be individual and group projects covering many subjects and sources, and concentrating on locating specific data and on conducting in-depth research. Students will learn how knowledge is organized, what kind of information is available in a library (and what is not), how to find the information and, once found, what to do with it. This course will combine elements of a treasure hunt and a mystery story, and will require curiosity, persistence, and a sense of humor.

*Offered Fall Semester*

### LX 501 — HUMANITIES COLLOQUIUM: ETHICS IN SOCIETY

3 credits

This course, an honors seminar, will consider the practical and societal applications of classical ethics. Students will read, think, argue, and try to understand some of the moral issues of our times. Outside speakers in medicine, law, and social services will be invited to lead discussions on ethics in their fields.

*Offered Spring Semester*

### MG 501 — SCIENCE COLLOQUIUM: FROM STAR GAZERS TO STAR WARS

3 credits

The science colloquium will focus on historical trends in science, great thinkers in the world of science, and science and technology in the modern age. Supplementary sources such as *The Ascent of Man*, *Connections*, Carl Sagan, and *Nova* may be used. An integral component of this colloquium will be the use of logic, critical thinking, analytical thinking, and data collection and analysis. Students will be encouraged to become involved in their own original research projects.

*Offered Fall Semester*

### NG 500 — SOCIAL SCIENCE COLLOQUIUM: SELF AND SOCIETY

3 credits

This interdisciplinary honors colloquium will focus on the individual within both a contemporary and historical context. Biography will serve as our unifying conceptual tool. A major theme will be how the individual shapes society, and conversely how society shapes the individual. A cross-cultural approach will be employed, although figures from the American experience will have a greater emphasis. Representative people will include men and women from diverse ethnic, racial, and social class backgrounds.

*Offered Fall Semester*



## Human Services Associate

### **AM 103 — HUMAN SERVICES 1**

4 credits

Theory and practice of human services is introduced through an emphasis on the multidisciplinary approach to life cycle needs. Historical development of human services, special needs populations, human services occupations, community dynamics, intervention techniques, and interpersonal skills will be the focus of lectures, discussions, and group projects. Competencies and attitudes essential for human services practice will be discussed. Planned observations and site visits will provide an organization to field work. **PREREQUISITE:** Acceptance in the Human Services Associate program.

*Offered Fall Semester*

### **AM 203 — HUMAN SERVICES 2**

4 credits

Through coordinated academic studies and supervised field work, the student continues to focus on the theory and practice of human services. Networking, demographics, legal concepts, assessment techniques, and community systems will be the focus of lectures and discussions. Factors affecting the human life cycle and effecting human services systems are studied. Supervised field work begins in the contracted cooperating community agency defined in Human Services 1. Qualified agency personnel provide direct supervision of consumer contact. Faculty monitor and evaluate field work through site visits. **PREREQUISITE:** Satisfactory completion of AM 103.

*Offered Spring Semester*

### **AM 204 — HUMAN SERVICES 2: FIELD WORK SEMINAR**

1 credit

Through the classroom seminar, successful integration of the first year Human Services student into the agency setting is accomplished. The primary area of concentration will be reinforcing theory and practice through course materials. Approaches will be examined with particular emphasis on applications appropriate to individual consumers and settings. Weekly campus seminar discussions enable the students to compare agency organization patterns and inter-agency referral practices while sharing field work experience and developing reporting and recording skills.

*Offered Spring Semester*

### **AM 304 — GROUP DYNAMICS: THEORY AND PRACTICE 1**

2 credits

Through this course the student experiences groups as open systems. Focusing on interactions in and among groups, the student is afforded opportunities to examine dimensions, values, and interpersonal styles. Dynamics are studied as the basis for authority, leadership, and membership. All scheduled sessions must be attended. **PREREQUISITES:** Satisfactory completion of AM 103, AM 202. Enrollment in AM 307, 308, and 309.

*Offered Fall Semester*

### **AM 307 — HUMAN SERVICES 3**

5 credits

Focusing on techniques and competencies required for the generalist, the student continues to study the theory and practice of human services. Legal mandates, community organizing, needs assessment, and information management will be reviewed. Placement in a contracted cooperating community agency will average 12 hours weekly. Qualified agency personnel will supervise field work. Faculty will monitor and evaluate field work through scheduled site visits. The student will progress from direct to indirect supervision. **PREREQUISITES:** Satisfactory completion of AM 103, AM 202. Enrollment in AM 304, AM 308, AM 309.

*Offered Fall Semester*

### **AM 308 — HUMAN SERVICES 3 FIELD WORK SEMINAR**

2 credits

Focusing on the correlation of academic studies and field work experiences, the weekly campus seminar will enable the student to study specific theoretical concepts and agency practices. Competencies essential for the human services practitioner will be discussed and evaluated. **PREREQUISITES:** Satisfactory completion of AM 103, AM 202. Enrollment in AM 304, AM 307, AM 309.

*Offered Fall Semester*

## LANDSCAPE/PLANT SCIENCE TECHNOLOGY

### **AM 309 — HUMAN SERVICES COMMUNICATION: SYSTEMS**

2 credits

The student is introduced to media as an educational and therapeutic resource for human services. Utilization of audio, video, graphics, and documentation techniques are studied. Ethical and legal considerations essential for media productions are presented. **PREREQUISITES:** Satisfactory completion of AM 103, AM 202. Enrollment in AM 304, AM 307, AM 308.

*Offered Fall Semester*

### **AM 404 — GROUP PROCESS: THEORY AND PRACTICE**

2 credits

Focusing on processes operating in and among groups, the student develops awareness of the social forces which influence group performance. Authority, responsibility, boundary functions, and significance of environment will be studied as socio-technical issues. Leadership and membership experience will enable the student to assess individual abilities essential for effective participation in groups. **PREREQUISITES:** Satisfactory completion of AM 103, 202, 304, 307, 308, 309. Enrollment in AM 407, 408, 409.

*Offered Spring Semester*

### **AM 407 — HUMAN SERVICES 4**

5 credits

Through coordinated academic studies and supervised practicum, the student continues to focus on the theory and practice of human services. Supervised practicum, averaging 12 hours weekly continues in the contracted cooperating community agency defined in Human Services 3. Qualified agency personnel supervise practicum. Faculty continue to monitor and evaluate field work through scheduled site visits. The student is expected to complete practicum assignments with indirect supervision. **PREREQUISITES:** Satisfactory completion of AM 103, AM 202, AM 304, AM 307, AM 308, AM 309. Enrollment in AM 404, AM 408, AM 409.

*Offered Spring Semester*

### **AM 408 — HUMAN SERVICES 4 FIELD WORK SEMINAR**

2 credits

Focusing on the correlation of academic studies and field work experiences, the student will discuss agency linkages, uses of consultation, and methods of program evaluation. Evaluation of competency development and definition of realistic post-graduation plans will be facilitated through this seminar. **PREREQUISITES:** Satisfactory completion of AM 103, AM 202, AM 304, AM 307, AM 308, AM 309. Enrollment in AM 404, AM 407, AM 409.

*Offered Spring Semester*

### **AM 409 — HUMAN SERVICES COMMUNICATION: APPLICATION**

2 credits

Data collection for media production and the uses of consultation are studied. Students are supervised in the planning, preparation and reproduction of assigned video projects. Adherence to ethical and legal concepts in the presentation and dissemination of recorded information is demonstrated. **PREREQUISITES:** Satisfactory completion of AM 103, AM 202, AM 304, AM 307, AM 308, AM 309. Enrollment in AM 404, AM 407, AM 408.

*Offered Spring Semester*

Humanities  
(See Art, English, Foreign Languages,  
Music, Philosophy)

## Landscape/Plant Science Technology

### **GL 111 — TREES IN THE LANDSCAPE**

4 credits

A course dealing in tree identification and use, as related to landscape work. Important types, both native and introduced, are discussed. Limited to trees generally hardy in the New England area. Representative types are discussed during laboratory sessions.



## LANDSCAPE/PLANT SCIENCE TECHNOLOGY

Lectures deal with general topics concerning tree use. Field trips, both on and off campus, are used to view the trees discussed. Three one-hour lectures, and three one-hour labs.

*Offered Fall Semester*

### **GL 120 — PRINCIPLES OF HORTICULTURE**

3 credits

A basic course in general horticulture, introducing the student to the fundamentals of soil study and use, insect and disease control and plant production techniques. The lectures cover the theoretical aspects of horticulture and the laboratories are used for field trips to horticultural business that employ graduates, and practical work. Two one-hour lectures, one three-hour lab.

*Offered Fall Semester*

### **GL 210 — PRESENTATION TECHNIQUES**

3 credits

A course in mechanical drafting, stressing the media and techniques commonly used in the preparation of landscape plans. The use of instruments, lettering and line techniques is covered first, followed by the development of isometric and perspective drawings. Working in three-dimensions is stressed, so that the student may best visualize spatial relationships in future landscape design courses. Three two-hour labs.

*Offered Spring Semester*

### **GL 220 — TURF MANAGEMENT**

3 credits

The study and identification of turf grasses as used in the New England area. Much emphasis is placed upon the best use of the types involved. Topics in the lectures include soil and fertilization requirements, drainage and irrigation, best turf types, grass and seed identification, maintenance and renovation, and disease and insect control. The laboratories are involved in soil testing, turf growing, maintenance techniques and field trips. Two hour lecture, one three-hour lab.

*Offered Spring Semester*

### **GL 311 — SHRUBS IN THE LANDSCAPE**

4 credits

A continuation of GL 111, covering the identification and use of the commonly used native and introduced shrubs and vines in this area. Emphasis is placed upon the best use of the types involved. Lectures are concerned with utilization of plant features such as flowers and fruits and with effects of the environment on the plants discussed. Laboratories are used for the discussion of specific plants. Three one-hour lectures and three one-hour labs.

*Offered Fall Semester*

### **GL 320 — LANDSCAPE PRACTICES**

3 credits

A course dealing with the basic aspects of operating and scheduling a typical landscaping business through the year. Students will be concerned with operations through the seasons of the year, and with practices such as purchasing, scheduling of work operations, and yearly grounds maintenance practices. Two one-hour lectures, one three-hour lab.

*Offered Fall Semester*

### **GL 330 — LANDSCAPE DESIGN 1**

3 credits

A course in the residential landscape design stressing basic design techniques and elements. Topics covered in lecture are line, shape, form, texture, pattern, color, the processes of design, the development of outdoor spaces and design presentation. Design problems in lab deal with entry ways, driveways, outdoor living areas, play areas, private gardens and the orientation of structures on the site. PREREQUISITE: GL 210. One one-hour lecture; two two-hour labs.

*Offered Fall Semester*

### **GL 350 — LANDSCAPE OPERATIONS (PLANTING)**

3 credits

This course deals with the principles involved in estimating, carrying out and maintaining landscape work. The lectures are used to introduce and discuss the work areas involved and laboratory time is spent in moving and planting trees and shrubs, estimating work and the use of work. Two hour lecture, one three-hour laboratory.

*Offered Fall Semester*



## LASER ELECTRO-OPTICS TECHNOLOGY

### **GL 410 — PLANT PROPAGATION**

3 credits

A course dealing with the procedures used in propagating and growing plant materials. Lectures deal with the theoretical aspects of growing and the laboratories are devoted to greenhouse and field work. Several field trips are taken to commercial nursery operations in the area. Two hour lecture, one three-hour lab.

*Offered Spring Semester*

### **GL 420 — LANDSCAPE DESIGN 2**

3 credits

A continuation of Landscape Design 1 stressing presentation and analysis. The areas dealt with are urban shopping and business spaces, small office buildings, schools and playgrounds, and parking areas. PREREQUISITE: GL 330. One one-hour lecture, two two-hour labs.

*Offered Spring Semester*

### **GL 431 — EARTH FORMS & STRUCTURES**

4 credits

A study of the equipment, materials and methods used in constructing landscape features such as walls, walks, drives, fences and terraces. Considerable field work is involved, in which the students lay out and construct features as mentioned above. Three one-hour lectures, one three-hour laboratory. PREREQUISITE: GL 330.

*Offered Spring Semester*

### **GL 450 — ENTOMOLOGY/DISEASE CONTROL**

3 credits

This course serves as an introduction to the study of insects, diseases, and weeds that affect the growth of ornamental plants in the New England area. Both the identification and control of the most common plant pests will be discussed. Control by cultural and biological methods, rather than the use of chemicals, will be stressed, but the realistic need for chemical control and the safe use of chemicals will also be a part of the course. Preparation for taking the state pesticide licensing examination will be a part of the course. Two one-hour lectures and one three-hour lab. PREREQUISITE: None.

*Offered Spring Semester*

## Laser Electro-Optics Technology

### **EL 090 — LASER SAFETY**

1 credit

This is a mandatory course for students in the LEOT program. The course deals with the subject of laser safety and the various government regulations concerning the different classes of lasers. The student is required to complete this course and pass a written examination before he or she may participate in any laboratory classes in the LEOT program. PREREQUISITE: None.

*Offered Spring Semester*

### **EL 320 — INTRODUCTION TO LASERS**

4 credits

This course is made up of three one-hour lecture sessions and a three-hour laboratory session. The course begins with an introduction to light, the atom, emission processes, and stimulated emission of radiation. Next, laser output characteristics and modification, materials, components and industrial laser types are discussed in detail. Finally, a description of major industrial laser applications is given. Safety and laboratory procedures are also covered. The lab section will loosely follow the lectures and some projects are constructed. Senior standing.

*Offered Fall Semester*

### **EL 325 — LASER ELECTRONICS**

4 credits

This course deals with the practical applications of linear electronic devices and circuits to the operation and control of laser systems. Topics will include high voltage power supplies, normal and switching supplies, diode laser power supplies, control interlocks, high voltage design considerations, and high voltage safety. Laboratory included. PREREQUISITES: ET 130, ET 230 or ET 110, ET 115, ET 210, ET 215.

*Offered Fall Semester*

# LASER ELECTRO-OPTICS TECHNOLOGY

## EL 330 — GEOMETRICAL OPTICS

4 credits

This course is the first of a two-semester sequence covering basic optical theory and components. Each course consists of three one-hour lecture sessions and a three-hour lab. Geometrical optics deals with the rectilinear propagation of light and the elementary treatment of image formation, lenses, mirrors, prisms, fiber optics, ray tracing, aberrations, optical system design, and optical instruments. The laboratory section parallels the lectures and familiarizes the student with optical laboratory components and procedures. PREREQUISITE: Senior standing.

*Offered Fall Semester*

## EL 335 — DATA ACQUISITION AND CONTROL

3 credits

This course is an introduction to computer data acquisition and the computer control of laboratory equipment. Data acquisition topics include analog to digital conversion, sampling and nyquist theory, sampling errors, data rate predictions, triggering conditions, and data reduction. Control topics include pid loops, digital to analog conversion, stepper motor theory, and typical sensor systems. Topics may vary depending on the availability of lab equipment and the abilities of the students. PREREQUISITES: ET 235 Digital Systems and senior standing in LEOT or permission of the instructor.

*Offered Fall Semester*

## EL 345 — PHOTONICS

4 credits

This course deals with the applications of linear integrated circuits to semiconductor lasers and integrated optical devices. Topics to be covered will include laser diode driver and detector circuits, photodiodes and phototransistors, integrated amplifiers, RF modulators, normal and switching power supplies. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Fall Semester*

## EL 348 — OPTICAL COMMUNICATIONS

3 credits

This course will present the principles and techniques associated with the transmission of optical radiation in waveguides (fibers) and the free space, optical sources, and modulation techniques. Homodyne and heterodyne detection will be discussed, as well as the design considerations for optical communications systems. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Fall Semester*

## EL 350 — OPTICAL SYSTEM DESIGN

3 credits

This course deals with the system configuration and design of optical systems. Various types of lenses, mirrors, and catoptric, dioptric and catadioptric systems will be covered, as well as holographic optical elements, image evaluation, OTF and MTF analysis. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Fall Semester*

## EL 352 — OPTICAL TEST AND MEASUREMENT

4 credits

This course will provide the student with a working knowledge of the various devices and techniques used for evaluating optical systems. Topics will include the applications and use of spectrometers, monochromators, spectrophotometers, and Michelson, Fabry-Perot, Twyman-Green, and Mach-Zehnder interferometers. Spatial resolution of optical systems. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Fall Semester*

## EL 412 — LASER ELECTRO-OPTICS PROJECTS

3 credits

This course deals with the electro-optic devices which are used in various optical and electronic devices. Some of the topics covered include: radiometry, photometry, photodetectors, thermal detectors, PN junction detectors, display devices, and opto-isolators. The laboratory allows the students to build and test electro-optic based projects. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Spring Semester*

## EL 415 — LASER SYSTEMS

4 credits

This course provides an in-depth analysis of the various types of laser systems in use today. Among the laser systems to be studied are semiconductor lasers, solid-state lasers,

## LAW ENFORCEMENT/CRIMINAL JUSTICE

ion lasers, molecular and dye lasers, excimer lasers, free electron lasers, and others. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Spring Semester*

### **EL 420 — WAVE OPTICS**

4 credits

Three major topics are studied in this course: wave optics, properties of light and matter, and the optics of transformations. The majority of the course is dedicated to wave optics and the study of diffraction and interference. In dealing with the properties of light and matter, polarization and optical boundaries are discussed. The optics of transformations deals with Fourier transform spectroscopy, transfer functions, optical data processing, and holography. Laboratory exercises will closely parallel classroom discussions and should help bridge the gap between theory and practical use of the concepts expressed. Senior standing and EL 320, EL 330. Honors component available.

*Offered Spring Semester*

### **EL 425 — INDUSTRIAL LASER APPLICATIONS**

4 credits

This course deals with the applications of lasers in industry. Among the many different uses of lasers to be studied are laser welding and surface treatment, material removal, laser marking and etching, non-destructive testing, distance measurement, lasers in medicine and surgery, lasers in construction, spectroscopy, communications and others. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Spring Semester*

### **EL 435 — FIBER/INTEGRATED OPTICS**

4 credits

This course will discuss elements of fiber and integrated optics including: fiber optic components and systems, waveguide transmission, fiber optic sensors, integrated optics, and optical circuitry. Also included will be fiber splicing, coupling, and measurements. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Spring Semester*

### **EL 438 — OPTOELECTRONICS**

4 credits

This course offers a detailed discussion of optoelectronic fundamentals. Subjects to be covered include: radiation and radiometry, photometry, phototransistors, photoresistors, optoisolators, detectors, semiconductor lasers, display devices, and optical waveguide. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Spring Semester*

### **EL 440 — VACUUM THIN FILM DEPOSITION**

4 credits

This course exposes the student to the theory and applications of dielectric thin film in optics. Topics covered include optical materials, design and analysis of multilayer dielectric coatings, optical filters, and vacuum deposition systems. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Spring Semester*

### **EL 442 — OPTICAL COMPONENT FABRICATION AND ASSEMBLY**

4 credits

This course deals with the opto-mechanical aspects of optical systems. Topics include processes in the design and mounting of optical components, specifications, constraints and tolerances, materials and substructures, environmental influences, experimental modeling and system evaluation. Lab included. PREREQUISITE: Senior standing in LEOT or permission of instructor.

*Offered Spring Semester*

## Law Enforcement/Criminal Justice

### **NL 100— CRIMINAL PROCEDURES 1**

3 credits

To familiarize the student planning a career in law enforcement with the Constitutional requirements and safeguards attendant throughout the criminal process, from investigation through arrest, interrogation, indictment, trial, and sentencing. Included is an in-depth review of the Bill of Rights and its influence in modern society. Heavy emphasis is placed



## LAW ENFORCEMENT/CRIMINAL JUSTICE

on actual case study and review of recent Supreme Court decisions, especially as related to practical situations and problems confronting Law Enforcement personnel. Selected readings focus on practical application of Constitutional principles to practical situations.

*Offered Fall Semester*

### **NL 110 — INTRODUCTION TO CRIMINAL JUSTICE**

3 credits

An introduction and basic survey of criminal justice and the court systems, both state and federal. The course explores the concept of bail, the functions and roles of the Judge, Prosecutor, Grand Jury, Defense Attorney, and Public Defenders, and sentencing in the courts. Also examined are the functions and objectives of the Probation Officer and Parole Office, especially as related to rehabilitation of the offender. The role of the policeman in modern society is discussed and explored in detail.

*Offered Fall Semester*

### **NL 200 — CRIMINAL PROCEDURES 2**

3 credits

Continuation of Criminal Procedures 1 NL 100. PREREQUISITE: Criminal Procedures 1 NL 100.

*Offered Spring Semester*

### **NL 230 — CRIMINAL EVIDENCE**

3 credits

An analytical study of the rules of evidence, including such general areas of Relevancy and Materiality, Hearsay Evidence, Introduction of Writings, Competency and Privilege, and Parole Evidence Rule. Probative Matter legally presented at the trial of a criminal case is given special attention. Also examined are rules concerning the admission of evidence in such specific areas as Search and Seizure, Pre-Trial Identification, admission of confessions, electronic surveillance, presumptions and privileges. PREREQUISITES: Intro. to Criminal Justice NL 110 or permission of Department Chairperson.

*Offered Spring Semester*

### **NL 300 — CRIMINAL LAW 1**

3 credits

This course explores and examines the substantive law of crimes, including the general and special areas of Criminal Laws. Of special interest is a survey of crimes against the person, crimes against property, parties to crimes, defenses based on justification, and the nature of the criminal act and conduct. Emphasis is placed on analysis of elements of particular crimes, offenses, and punishments through an examination of the statutes and case example. PREREQUISITE: NL 100, NL 110, and NL 200 or permission of the Department Chairperson.

*Offered Fall Semester*

### **NL 340 — CRIMINAL INVESTIGATION**

3 credits

An introduction to field investigation, including conduct at the scene of the crime, interviewing and interrogation of witnesses and suspects, the use of informants, and techniques of surveillance. Emphasis is placed on special investigative techniques and on court procedures of the police case.

*Offered Fall Semester*

### **NL 400 — CRIMINAL LAW 2**

3 credits

Continuation of Criminal Law 1 NL 300. PREREQUISITES: Criminal Law 1 NL 300 and Intro. to Criminal Justice NL 110 or permission of Department Chairperson.

*Offered Spring Semester*

### **NL 405 — CURRENT ISSUES IN LAW ENFORCEMENT**

3 credits

This course explores current issues in the field of Law Enforcement and Corrections. Included as major topics to be studied are the causes, effects, and treatment of drug addiction in society, the correctional system generally in America, work release programs, prisoners' rights, women's rights, the philosophy of the juvenile justice system, victimology, crime in the society, and a discussion of rehabilitation and reintroduction of the offender in contemporary society. These issues will be explored from the perspective of the social sciences and their sociological context.

## LAW ENFORCEMENT/CRIMINAL JUSTICE

### **NL 411 — JUVENILE PROCEDURES**

3 credits

This course examines the role of the police in delinquency prevention and the make-up of Youth Service Division within the Police Department. Emphasis is on theory, administration, control, treatment, confinement, community resources, relationships with the public and the juvenile court.

### **NL 413 — PAROLE, PROBATION AND REHABILITATION**

3 credits

This course familiarizes the student planning a career in Law Enforcement with laws, rules, and regulations attendant with Probation and Parole and Corrections, as well as with the basic concepts and mechanics of each. The course also examines the organizational structure of Probation, the Parole Board, and the Department of Correction in Massachusetts. Theories employed in the sentencing and rehabilitation of different kinds of offenders will be studied, along with an analysis of rehabilitation of the offender in the community versus in penal institutions. Utilization and effectiveness of work-release programs, half-way houses and treatment centers for drug offenders and alcoholics will be considered.

### **NL 415 — POLICE/COMMUNITY RELATIONS**

3 credits

This course will examine the relationship between police and the community they serve. This relationship has often been marked by hostility and lack of confidence in the police, particularly in minority group areas. How this hostility is reflected in day-to-day police operations, recruiting, morale and safety of the individual officer will be examined through the course readings, lectures and discussion. The response of police to these pressures will also be examined. The problem of police ethics and the role this plays in developing a police image in the community will be explored. What part police/press relations play in the development of police/community relations will be reviewed through actual police-related news stories. The ultimate question of freedom versus authority, of the police state versus constitutional democracy, will be examined in relationship to the course reading and discussions.

### **NL 450 — LAW ENFORCEMENT MANAGEMENT & PLANNING**

3 credits

Consideration of police problems at the administrative level, including coordination of all branches of a police department. An evaluation of line, staff, and auxiliary functions and the interrelationship of each. The purpose, need, and scope of planning in the police operation, including staffing, correction of data and use of data processing.

*Offered Spring Semester*

### **NL 475 — LAW ENFORCEMENT SEMINAR**

3 credits

This course reviews and correlates all major areas of study covered in the Law Enforcement/Criminal Justice curriculum. Through general discussion and selected readings, the course explores and re-examines all major areas in Law Enforcement with the aim of consolidating previously attained knowledge and skills. The course seeks to provide the student with a distinct perception, overview and evaluation of the Criminal Justice process, including the basic trial format and courtroom procedure.

Legal Office Administration  
(See Office Administration)

Management  
(See Business Administration)

Marketing  
(See Business Administration)

Math and Natural Sciences  
(See Engineering Transfer, Computer Science  
Transfer, Biological Sciences,  
Chemistry, Mathematics, Physics)

Mathematics

**MM 071 — MATHEMATICS**

1 credit

The concept of whole numbers and the place value system. Addition, subtraction, multiplication and division of whole numbers. Exponents, perfect square roots, primes, composites and prime factoring.

**MM 072 — MATHEMATICS**

1 credit

Fractions and decimals. Addition, subtraction, multiplication and division of both fractions and decimals. Reducing fractions and converting fractions to decimals. PREREQUISITE: MM 071 or its equivalent.

**MM 073 — MATHEMATICS**

1 credit

Changing percentage to fractions and fractions to percentage. The solution of the various types of percentage problems. An introduction to radicals. Perimeter and area of rectangles and circles. PREREQUISITE: MM 072 or its equivalent.

**MM 075 — BASIC PRE-TECHNOLOGY MATHEMATICS**

3 credits

This course is equivalent to the Basic Arithmetic course (MM 071, 072, 073) with technical applications. It is designed to prepare students in the following areas: positive and negative numbers, fractions, decimals, geometric figures, ratio and proportion, percents, areas and volumes, right triangles, basic equations. Three hours of lecture per week. PREREQUISITE: None.

**MM 077 — MATHEMATICS FOR NURSING AND ALLIED HEALTH**

1 credit

Using proportions to convert measures in metrics and apothecary system. Calculating drug doses not available in units prescribed. Calculating drug doses of extremely small units, insulin dosages, infant and child dosage. Preparing solutions from powders and liquids. PREREQUISITE: MM 100 to level 073, MM 078, MM 079 or math placement of MM 081.

**MM 078 — MATHEMATICS**

3 credits

Same course content as MM 071, MM 072, and MM 073, with the exception that this course is taught using a lecture rather than an audio-tutorial approach. PREREQUISITE: None.

**MM 079 — MATHEMATICS**

4 credits

Topics include basic operations with whole numbers, fractions and decimals. Exponents, primes, composites, and percents are also covered. The course is composed of three hours of lecture and a three-hour computer laboratory in which practical applications are addressed.

**MM 081 — MATHEMATICS**

1 credit

Topics include a review of arithmetic, integers, and simplification of algebraic expressions. Solving linear equations and inequalities. PREREQUISITE: MM 073, MM 078, MM 079, or math placement of MM 081.

**MM 082 — MATHEMATICS**

1 credit

Topics include exponents and scientific notation, polynomials, operations with polynomials, and factoring trinomials. PREREQUISITE: MM 081.

**MM 083 — MATHEMATICS**

1 credit

Rational expressions and solving rational equations. Solving problems and proportions. A review of chapters 1-5. PREREQUISITE: MM 082.



**MM 084 — MATEMATICAS**

1 credito

Course contents same as MM 081. La relacion de los numeros enteros positivos & el cero con conjuntos, numerales & numeros. Operaciones binarias de suma, resta, multiplicacion & division. Soluciones de ecuaciones lineares simples. Propiedades de los numeros enteros positivos & el cero.

**MM 085 — MATEMATICAS**

1 credito

Course contents same as MM 082. Suma, resta multiplicacion & division de los numeros enteros. Simplificaciones de expresiones numerales conteniendo enteros, valores absolutos & exponentes. Simplificacion de expresiones variables. PREREQUISITO: MM 084 o su equivalente.

**MM 086 — MATEMATICAS**

1 credito

Course contents same as MM 083. Propiedades & axiomas de los numeros reales. Suma, resta, multiplicacion & division de expresiones fraccionales. PREREQUISITE: MM 085 o su equivalente.

**MM 087 — MATHEMATICS**

3 credits

This course is a lecture alternative to MM 081-MM 083. PREREQUISITES: MM 078, MM 079 or math placement of MM 081.

**MM 091 — MATHEMATICS**

1 credit

Topics include graphing linear equations and inequalities in one and two variables, slope, equations of lines, and systems of linear equations. PREREQUISITE: MM 083 or its equivalent.

**MM 092 — MATHEMATICS**

1 credit

Topics include roots, radicals, quadratic equations and applications, and parabolas. PREREQUISITE: MM 091.

**MM 093 — MATHEMATICS**

1 credit

Topics include a review of all material covered in MM 081-MM 083 and MM 091-MM 092. Completion of this module indicates the student is prepared to progress to pre-calculus (college level) mathematics. PREREQUISITE: MM 092 or its equivalent.

**MM 097 — MATHEMATICS**

3 credits

This course is a lecture equivalent to MM 091-MM 093. PREREQUISITES: MM 083, MM 087 or math placement of MM 091.

**MM 100 — MATHEMATICS**

1-3 credits

There are 15 audio-tutorial mathematics classes in the MM 100 Mathematics series. They are:

MM 071	MM 081	MM 091	MM 101	MM 105
MM 072	MM 082	MM 092	MM 102	MM 106
MM 073	MM 083	MM 093	MM 103	MM 107

A complete description of these audio-tutorial mathematics courses is available in the "Student Information Booklet." Copies of this booklet are available without charge by writing to: Chairman, Mathematics Department, STCC, One Armory Square, Springfield, MA 01105.

**MM 101 — MATHEMATICS**

1 credit

Angles and their measure, Pythagorean theorem, right triangle trigonometry, laws of sines and cosines, vectors. PREREQUISITE: MM 093 or equivalent.

**MM 102 — MATHEMATICS**

1 credit

Introduction to sets, graphs and field properties, factoring, algebraic fractions, exponents and radicals. PREREQUISITE: MM 101.

**MM 103 — MATHEMATICS**

1 credit

Solution sets of linear and quadratic equations, relations and functions, both linear and quadratic. PREREQUISITE: MM 102.

**MM 105 — MATHEMATICS**

1 credit

Properties and applications of special functions and relations, conic sections, variation, inverse functions, exponential functions. PREREQUISITE: MM 103 or its equivalent.

## MATHEMATICS

### MM 106 — MATHEMATICS

1 credit

Logarithms, solution of equations involving exponential expressions, radicals, and logarithms, binomial theorem, sequences and series. PREREQUISITE: MM 105.

### MM 108 — MATHEMATICS

3 credits

Same course content as MM 105, MM 106, and MM 107, except courses are taught on a lecture basis rather than an audio-tutorial basis.

### MM 120 — CONTEMPORARY MATHEMATICS 1

3 credits

Problem solving. Hand Calculators. Metric System. Percents. Ratio and Proportion. Applications of Area and Volume, Pythagorean Theorem, Taxes, Credit, Installment Buying. PREREQUISITE: MM 083, MM 087 or math placement of MM 091.

### MM 122 — APPLIED MATHEMATICS 1

3 credits

Topics include a review of algebra; linear equations and inequalities; matrices; systems of equations; linear programming; and probability. This course was previously called Finite Mathematics 1. PREREQUISITES: MM 093, MM 097 or math placement of MM 101.

*Offered Fall and Spring Semesters*

### MM 124 — MATHEMATICS FOR A TECHNICAL SOCIETY 1

3 credits

This is the first course in a sequence designed to address the needs of a Liberal Arts/General Studies transfer student. This sequence stresses the connection between contemporary mathematics and modern society. Topics will be selected from the area of social choice, geometry, management science, probability and statistics, and computer science. PREREQUISITES: MM 093, MM 097 or math placement of MM 101.

### MM 125 — MATHEMATICAL AND ALGEBRAIC FUNCTIONS

3 credits

An intermediate level course in algebra, including topics in factoring, exponential and radical manipulation, fractional equations, logarithms, geometric functions, and principles of graphing.

### MM 132 — TECHNICAL MATHEMATICS 1

4 credits

Introduction to calculators, scientific notation, significant figures, functions and graphs, right triangle trigonometry, vectors, solution of linear and quadratic equations, systems of linear equations, determinants, factoring, algebraic functions, laws of sines and cosines, graphs of trigonometric functions, exponents and radicals. PREREQUISITE: MM 093, MM 097 or math placement of MM 101.

### MM 137 — INDEPENDENT STUDY OF MATHEMATICS

1, 2, 3, or 4 credits

Independent study of special topics in mathematics under the direction of an instructor. PREREQUISITE: Permission of the Department Chairperson.

### MM 140 — STATISTICS AND QUALITY CONTROL

3 credits

An introduction to statistical techniques and quality control procedures used in a clinical laboratory. The course addresses descriptive and inferential statistics, and covers hypothesis testing, confidence intervals, and statistical analysis of quality control charts. PREREQUISITES: MM 093 or MM 097 or mathematics placement of MM 101.

### MM 142 — STATISTICS 1

3 credits

Descriptive methods of collecting, organizing, analyzing, and presenting categorical and numerical data. Elementary probability theory and distributions, basic components of sampling theory, estimation and hypothesis testing. PREREQUISITE: MM 093, MM 097 or math placement of MM 101.

### MM 143 — BUSINESS STATISTICS 1

3 credits

Descriptive methods of collecting, organizing, analyzing, interpreting, and presenting numerical data are examined. Elementary probability concepts and distributions, sample distributions, and statistical inference are emphasized. PREREQUISITE: MM 093, MM 097 or math placement of MM 101.

### MM 155 — CALCULUS 1

4 credits

The straight line; conic sections; inequalities; functions and graphs; limits and continuity; differentiation of algebraic functions; maxima/minima theory; related rates and differentials.

Introduction to indefinite and definite integration of algebraic functions, arc length, volumes by disk and shell methods, surface of revolution, moments and centroids. PREREQUISITE: MM 132 or math placement above MM 107.

## **MM 157 — CALCULUS FOR BUSINESS, LIFE, AND SOCIAL SCIENCES 1** 3 credits

Introduction to calculus with applications to business, life, and social sciences. Functions and graphs, limits, the derivative, techniques of differentiation, curve sketching, maximum/minimum problems, exponential and logarithmic functions, exponential growth and decay. PREREQUISITES: MM 097, MM 093 or placement at MM 101 or higher.

## **MM 222 — APPLIED MATHEMATICS 2**

3 credits

Topics include limits; rates of change; differentiation of algebraic, logarithmic, and exponential functions; applications of the derivative; definite and indefinite integration; applications of the definite integral. This course was previously called Finite Mathematics 2. PREREQUISITE: MM 122.

*Offered Fall and Spring Semesters*

## **MM 224 — MATHEMATICS FOR A TECHNICAL SOCIETY 2**

3 credits

This is the second course in sequence for the Liberal Arts/General Studies transfer student. Applications will be selected from the areas of social choice, probability and statistics, computer science, and management science. PREREQUISITE: MM 124.

## **MM 232 — TECHNICAL MATHEMATICS 2**

4 credits

Complex numbers, logarithms, systems of nonlinear equations, inequalities, variation, progressions, trigonometric identities and equations, inverse trigonometric functions, analytical geometry, introduction to differential and integral calculus. PREREQUISITE: MM 132.

## **MM 237 — INDEPENDENT STUDY OF MATHEMATICS**

1, 2, 3, or 4 credits

Continuation of MM 137. PREREQUISITE: MM 137, permission of the department chairperson.

## **MM 255 — CALCULUS 2**

4 credits

Differentiation and integration of transcendental functions; techniques of integration including trigonometric substitutions, integration by parts, methods of partial fractions and completing the square; hyperbolic functions, L'Hospital's Rule, improper integrals, infinite sequences and series, power series, Taylor series. PREREQUISITE: MM 155 or its equivalent.

## **MM 257 — CALCULUS FOR BUSINESS, LIFE, AND SOCIAL SCIENCES 2**

3 credits

Continuation of MM 157. Elementary techniques of integration, introduction to differential equations, applications to several mathematical models in business, life, and social sciences, and partial derivatives. PREREQUISITE: MM 157.

## **MM 355 — CALCULUS 3**

4 credits

Topics include polar coordinates, multivariable calculus: 3-dimensional coordinate systems and surfaces from  $R_n$  to  $R_m$ ; limits and continuity; partial differentiation; chain rule; the gradient; directional derivatives; maxima and minima; multiple integration and applications; vector calculus: line integrals, surface integrals; Green's Theorem; Divergence Theorem; Stroke's Theorem. PREREQUISITE: MM 255 or its equivalent.

## **MM 375 — DISCRETE MATHEMATICAL STRUCTURES 1**

3 credits

Fundamentals of logic, set theory, relations, partially ordered sets, Boolean algebra, induction, recursion, algorithmic design, partitions, counting, permutations and combinations. PREREQUISITE: MM 255.

## **MM 439 — LINEAR ALGEBRA**

3 credits

Geometric vectors; vector spaces, systems of linear equations; inner product spaces; linear transformations and matrices; determinants; eigenvalues and eigenvectors. PREREQUISITE: Calculus 2 MM 255 or permission of instructor.

## **MM 440 — LINEAR ALGEBRA LABORATORY**

1 credit

This is a one semester hour computer laboratory in linear algebra utilizing on-campus computers and APL. PREREQUISITE: MM 255, COREQUISITE: MM 439.



## MATHEMATICS

### **MM 455 — DIFFERENTIAL EQUATIONS**

4 credits

Classical methods of solution of first order and linear higher order ordinary differential equations. LaPlace Transform and Power Series solutions of linear ordinary differential equations. Matrix solutions to linear systems of ordinary differential equations. Numerical methods of solution of first order ordinary differential equations using the digital computer. **PREREQUISITE:** MM 355 (or MM 255 with permission of instructor).

### **MM 475 — DISCRETE MATHEMATICAL STRUCTURES 2**

3 credits

Trees and languages, semigroups and groups, finite-state machines, product and quotient groups, machines and regular languages, coding of binary information, and error detection are topics covered. **PREREQUISITE:** MM 375.

### **MN 100 — COMPUTERS AND SOCIETY**

4 credits

This interdisciplinary science-sociology, lecture and laboratory course is designed to introduce the liberal arts student to the pervasive use of computers in today's world. In the laboratory, students will have hands-on experience with personal microcomputers. They will use not only languages, but word processing, file manipulation, music synthesis, and graphics. The lectures will explore the impact computers are exerting on our social institutions; the myriad ways computers are changing the ways we work and ultimately the way we think; and projections of changes computers are expected to bring to our professional and personal life styles.

## Mechanical Engineering Technology

### **FA 112 — METAL MACHINING 1**

3 credits

This course is designed to give an overview of the different manufacturing processes used today. Students will become familiar with the technical foundations of the industry. This lab-oriented course will require the completion of projects on various machine tools including vertical milling machines, engine lathes, and surface grinders. Cutting and non-cutting hand tools will be introduced along with dimensional measurement and layout equipment.

*Offered Fall Semester*

### **FA 211 — METAL MACHINING 2**

3 credits

This course is designed to build and expand upon the knowledge gained in the first semester. Students will be introduced to the order of operations used in manufacturing. Students will build projects, applying knowledge from the lecture environment. During this lab-oriented course, student projects will be heat treated. Students will demonstrate proficiency in the use of cutoff equipment, the rockwell tester, vertical milling machines, engine lathes, surface grinders, heat treatment, and surface treatment of parts. **PREREQUISITE:** FA 112.

*Offered Spring Semester*

### **FA 235 — CNC PROGRAMMING**

3 credits

This course is an introduction to the fundamental concepts of Computer Numerical Control (CNC). The impact of CNC on manufacturing and productivity is discussed. The emphasis of this course is to manually program different types of CNC systems in use today. Course content includes writing programs to perform three-axis hole and milling operations, along with turning and facing routines for a lathe. **PREREQUISITE:** FA 112.

*Offered Spring Semester*

### **FA 336 — COMPUTER-AIDED MANUFACTURING 1 (CAM 1)**

3 credits

In a laboratory setting, CAM 1 explores machining by utilizing a graphical software package, SmartCAM, to generate part programs for a CNC mill. Following a review of manual part programming, the emphasis of the course is on learning to use the CAM software to select tools, enter part geometry, and convert screen graphics into a CNC program. The student then learns how to communicate the program to the machine and manufacture the part. Intensive work is included in editing the graphics to fully utilize the software. In addition, the student will learn the integration of Computer-Aided Design (CAD) with CAM to enhance his or her understanding of proceeding from the design process through the manufacturing process. **PREREQUISITE:** FA 112.

## MECHANICAL ENGINEERING TECHNOLOGY

### **FA 436 — COMPUTER-AIDED MANUFACTURING 2 (CAM 2)**

3 credits

CAM 2 continues the technology learned in CAM 1 by utilizing a graphical software package, SmartCAM, to generate part programs for a CNC mill. Following a review of CAM 1, students proceed in creating more complex parts. The emphasis of the course is on learning to use the CAM software to select tools, enter part geometry, and convert screen graphics into a CNC program. The student then learns how to communicate the program to the machine and manufacture the part. In addition, the student will learn the integration of Computer-Aided Design (CAD) with CAM to enhance his or her understanding of proceeding from the design process through the manufacturing process. An introduction to machine files and code generator design is covered. Also, the writing of macros and an introduction to 3-D machining is presented. **PREREQUISITE:** FA 336.

### **FB 110 — PRODUCTION PROCESSES**

3 credits

This course is designed to provide the student with knowledge of the various manufacturing processes, such as castings, forgings, power metallurgy, and primary working operations. Included are topics in materials, quality control, welding, metal removal operations, and an introduction to automated manufacturing systems.

*Offered Spring Semester*

### **FB 135 — MECHANICAL DRAWING**

3 credits

This course covers basic drawing skills. The fundamentals of orthogonal projection, sectioning, and auxiliary views will be covered. Descriptive geometric principles and the 3D concepts of axonometric, obliques, and central projection will be explored.

*Offered Fall Semester*

### **FB 221 — MECHANICS**

3 credits

The fundamentals of static equilibrium are studied. Topics included are: resultants of force systems, equilibrium conditions in trusses and frames, tension and compression, moments, shear and bending diagrams, frictional forces, and centroids and moments of inertia. **PREREQUISITE:** MM 132.

*Offered Spring Semester*

### **FB 224 — MACHINE DESIGN**

3 credits

This course concentrates on the design of machine elements including shafts, gears, cams, sprockets, bearings, and clutches. Preparation of assembly drawings and geometric tolerancing are also included. **PREREQUISITE:** FB 135.

*Offered Spring Semester*

### **FB 225 — INTRODUCTION TO CIM**

3 credits

An introduction to Computer Integrated Manufacturing (CIM) as related to various manufacturing environments. The student will become acquainted with CAD, CAM, CIM, robotics, flexible manufacturing cells, and just-in-time manufacturing practices. An overview of how these systems are employed in industry will be discussed. The focus will be on continuous improvement methods brought about by the computer.

*Offered Fall Semester*

### **FB 230 — CAD LEVEL 1**

3 credits

The purpose of this course is to introduce the student to the terminology, capabilities, and operation of computer-aided drafting hardware and software. The student will be given graphic laboratory problems to create work files and to develop libraries and elementary drawings utilizing lines, rectangles, circles, arcs, and ellipses. Using AutoCAD as a typical computer-aided drafting program, students will also learn scaling, rotations, translations, and projections. **PREREQUISITE:** FB 135.

*Offered Spring Semester*

### **FB 315 — COMPUTER OPERATING SYSTEMS**

3 credits

This introductory course will emphasize the practical aspects of operating systems. Initially, the IBM PC DOS operating system will be discussed. Topics will include the basic internal and external commands, device names, redirection and piping, sub-directories and paths, device drivers, and batch files. Then the IBM AS/400 operating system will be studied. Topics will include the basic commands, directories, physical and logical device names,



# MECHANICAL ENGINEERING TECHNOLOGY

logical name tables, local and global symbols, command files, UIC-based protection, and access-control lists.

*Offered Fall Semester*

## **FB 321 — STRENGTH OF MATERIALS**

3 credits

A study of forces and force systems and their applications to materials. Stress and strain produced by the application of forces on beams, columns, trusses and riveted and welded sections are studied for simple tension and shear. Laboratory experiments provide experience in measuring and calculating stresses produced for conditions of tension, compression, shear, bending and torsion. PREREQUISITE: MM 101, MM 103.

*Offered Fall Semester*

## **FB 331 — STATISTICAL PROCESS CONTROL**

3 credits

A one-semester course designed to familiarize the student with quality control concepts, emphasizing the various types of control charts, using a statistical software package. The utilization of the computer with reference to process control techniques in detail and how the techniques relate to controlling manufacturing operations and assuring quality of the highest standards will be studied.

## **FB 336 — CAD LEVEL 2**

3 credits

This course is a continuation of CAD Level 1. The objectives of CAD Level 1 will be reviewed, followed by such topics as sectioning, cams, gears, and linkages. Advanced CAD topics including attributes, prototype drawing creation, and dimension variables are studied, as well as methods for producing professional quality drawings. PREREQUISITE: FB 230.

*Offered Fall Semester*

## **FB 415 — ADVANCED CIM APPLICATIONS**

3 credits

This course expands upon the general knowledge gained in FB 225 by providing the student with specific applications of CIM utilizing a hands-on laboratory setting. Students will analyze assigned projects and formulate a CIM system to solve the problem. Emphasis is on management and cost efficiency, including report generation.

Additionally, students will integrate CAD and CAM to design, build, program and operate a manufacturing cell to simulate a manufacturing environment.

*Offered Spring Semester*

## **FB 418 — AUTOMATED SYSTEMS LAB**

3 credits

An intensive, lab-oriented course designed to familiarize students with automated robotics used in the CIM environment. Students will learn to integrate robotics with computer numerical control machines. Students will develop flexible manufacturing cells. The emphasis will be placed on CNC processing stations, loop conveyor system, material handling, and vision cameras used for part inspection. PREREQUISITES: FB 110, FA 336.

*Offered Spring Semester*

## **FB 420 — FLUID MECHANICS**

3 credits

This course includes a comprehensive study of hydrostatics, principles governing fluids at rest, pressure measurement, hydrostatic forces on submerged areas and objects, fluid flow in pipes under pressure, fluid energy, power, friction losses, Bernoulli's Theorem, and flow measurement. Application of these principles to the operation or control of fluid power equipment is also covered. PREREQUISITE: FB 221.

*Offered Fall Semester*

## **FB 430 — ENGINEERING ECONOMY**

3 credits

This course is designed to acquaint the student with the various alternatives in engineering problems, and methods of evaluating them. The course covers the effects of capital, break-even analysis, costs associated with equipment, depreciation and tax benefits, and the various types of costs associated with business. Computerized cost estimating is also covered, using the IBM-based Costimator by Manufacturers Technologies.

*Offered Fall Semester*



## MEDICAL ASSISTANT

### **FB 435 — CAD LEVEL 3**

3 credits

An advanced study of computer-aided drafting using three-dimensional surface modeling techniques is featured in this course. Also included is creating objects using solid modeling concepts. Utilization of solid models to provide orthographic views, sections, and 3D views is emphasized. **PREREQUISITE:** FB 336.

*Offered Spring Semester*

### **FB 442 — MANUFACTURING PLANNING AND CONTROL**

3 credits

General consideration is given to various phases and elements of production control which are later applied to continuous process companies and typical job shops. Several problem cases serve as a basis for classroom discussion. In addition to a general introduction involving various types of manufacturing plants and their respective products, the course includes a study of the elements that contribute to a successful production control program. Production forecasting, product development, control of materials, routing, scheduling, dispatching and follow-up are studied in sequence in terms of their significance and their relationship to production control. The course is based upon the idea that there is no standard production control procedure applicable to all manufacturing companies, but that there is a correct production control procedure which can be developed for any company, large or small.

*Offered Spring Semester*

### **FB 443 — CIM APPLICATIONS**

3 credits

This course is designed to acquaint the student with the operations of a personal computer, using various types of software for Computer-Aided Drafting/Computer-Aided Manufacturing/Computer-Integrated Manufacturing/Computer-Aided Engineering. The student will become familiar with using spreadsheets, database, statistical packages, and other software for various industrial and manufacturing problems related to industrial environments.

*Offered Fall Semester*

### **FB 465 — ADVANCED CAD APPLICATIONS**

2 credits

This course advances beyond the standard AutoCAD environment by exploring the concepts of customizing. Customizing includes creating menu macros and learning AutoLISP, AutoCAD's internal programming language. Menu macros and AutoLISP programming allow the user to create custom commands in order to automate frequently used, labor intensive routines.

### **GD 260 — GRAPHICS DESIGN LAB**

2 credits

The student will have the opportunity to put together all his knowledge obtained on various projects assigned by the instructor. He will do the design and rectify by calculations and computations in relationship to this along with the economical aspects.

*Offered Spring Semester*

## Medical Assistant

### **AA 101 — MEDICAL TERMINOLOGY 1**

3 credits

This course is designed to furnish the basic tools for building a medical vocabulary and to acquaint the reader with medical terms as they pertain to anatomy, physiology and disease. Emphasis will be placed on the most commonly used combinations of forms, prefixes and suffixes that make up the language of medicine. A working knowledge of medical terminology is desirable for anyone entering one of the Allied Health fields.

*Offered Fall and Spring Semesters*

### **AA 105 — INTRODUCTION TO MEDICAL ASSISTING**

1 credit

This module begins with an orientation to the profession of medical assisting. With the explosion of technology in the administrative procedures, and the regularity of surgical procedures now being done in the ambulatory setting, the role of the medical assistant has changed dramatically. The role of the patient educator as well as clinical assistant and administrative assistant will be explored.

## MEDICAL ASSISTANT

**AA 111 — HUMAN SEXUALITY: YESTERDAY, TODAY AND TOMORROW** 1 credit  
This module offers the opportunity for the student to acknowledge his/her feelings and thoughts; examine attitudes, beliefs, cultural patterns; and clarify his/her own value system as it relates to Human Sexuality, in an arena of nonjudgmental caring and concern. Impact of heredity/environment on one's sense of self-esteem will be examined.

*Offered Fall and Spring Semesters*

**AA 112 — LIVING AND DYING: VALUES AND CHOICES** 1 credit  
The quality of life with emphasis on the student's values and choices will be explored and shared along with the impact of *Life's Losses* including divorce, separations, death and bereavement. This seminar module will examine the power and strength of the family unit and network support during the times of crisis.

*Offered Fall and Spring Semesters*

**AA 113 — SKILLS FOR HEALTH** 1 credit  
A one-credit, five-week module geared to the exploration of total wellness; mind, body and spirit. The sense of responsibility and the learned skills could apply to the General Studies student as well as to those in Health/Human Services, business, technology programs, etc. Participants will explore the art/science of wellness through lecture and discussion of the holistic health component; reviewing communication skills, stress reduction, values clarification, and ethical conduct as they might apply in the health care field, market place, community at large, and/or in the family unit.

*Offered Fall and Spring Semesters*

**AA 114 — CARDIO-PULMONARY RESUSCITATION** 0 credit  
This Red Cross modular course is designed to recertify for emergency first aid for respiratory failure and cardiac arrest victims of all ages. **PREREQUISITES:** AA 305, AA 210, or AA 211, and permission of department chairperson.

**AA 116 — PRINCIPLES AND PRACTICE OF PHLEBOTOMY** 1 credit  
This module is designed to train and educate students in the procedure of phlebotomy/venipuncture. Incorporated into the class will be a lecture and laboratory practice sessions. **PREREQUISITES:** MB 132 and MB 232, and permission of the Department Chairperson.

**AA 119 — APPLIED LEGAL CONCEPTS (MEDICAL ASSISTANT)** 1 credit  
This one-credit course examines the legal and ethical responsibilities in which the medical assistant becomes involved during patient care. Knowledge of the law is necessary to provide the best service to the patient and employer. The basic concepts of the law will be applied to the medical assistant in the ambulatory care setting.

*Offered Fall Semester*

**AA 201 — MEDICAL TERMINOLOGY 2** 3 credits  
A continuation of AA 101 Medical Terminology 1. Emphasis will be placed on specific areas of medicine such as pathology, radiology, nuclear medicine, surgery, etc. Discussion of the tests, procedures, and diseases that are commonly related to each area will be an integral part. **PREREQUISITE:** AA 101.

**AA 202 — MEDICAL ASSISTANT TECHNIQUES 1** 5 credits  
Presents theory and planned study activity in assisting with physical exams, taking vital signs and health history, medical asepsis, sterile technique, and selected diagnostic and therapeutic procedures. The student will be introduced to the computer concepts for medical office procedures and will learn how to enter key points of patient care such as allergies, results of diagnostic procedures, and other consulting physicians. **PREREQUISITE:** AA 105.

*Offered Spring Semester*

**AA 210 — HEALTH SCIENCE 2** 3 credits  
Presents combined classroom theory and planned student activity in a laboratory setting to prepare the allied health student to perform the following: vital signs, medical and surgical asepsis, CPR, body mechanics and patient movement, and a general understanding of medications.

*Offered Spring Semester*

## MEDICAL ASSISTANT

### **AA 211 — HEALTH SCIENCE 3**

1 credit

Presents theory and practice in classroom and laboratory setting to prepare Allied Health students for basic clinical skills and life support measures. **PREREQUISITE:** Permission of Department Chairperson.

### **AA 301 — INTRODUCTION TO HUMAN DISEASE**

3 credits

This course is designed to acquaint students with the major causes of death in the United States: heart disease, cancer, stroke, and others. The student will become aware of genetic and environmental effects on health. In addition, he/she will learn how to promote his/her own good health, and learn ways of taking charge to help prevent these major diseases from affecting self or family. Emphasis is on the relationship between daily life styles and health as a point of action for health-conscious people. This course is open to the entire student body; background in biology is helpful.

*Offered Fall Semester*

### **AA 305 — MEDICAL ASSISTANT TECHNIQUES 2**

5 credits

This course is a continuation of advanced theory and skills in medical assistant techniques. Selected laboratory procedures will include cardio-pulmonary resuscitation, minor surgery, and the modalities used in rehabilitative procedures. The student will become more proficient in entering key points of patient care on the computer such as surgical procedures, using the correct codes to describe the service, and any other services from other providers involved in the patient's care. **PREREQUISITE:** AA 202.

*Offered Fall Semester*

### **AA 319 — DOSAGE AND CALCULATIONS**

1 credit

This course will introduce the student to the accurate calculation of drug dosage, an essential knowledge in the health care field, since it is the responsibility of those administering drugs to precisely and efficiently carry out medical orders. A review of fractions, decimals, percents, ratios, and roman numerals will be included, emphasizing examples used in the most common medication orders. Learning will be reinforced by computer-assisted problem solving and review questions that directly relate to concepts taught in AA 320.

*Offered Fall Semester*

### **AA 320 — PHARMACOLOGY**

3 credits

This introductory course covers pharmaceutical references and sources, classifications and actions, trade and generic names of drugs. Presents current and commonly used practices, procedures, medications, and preparations. Effects of drugs and their side effects on body systems will be explored. Legal aspects of administering, prescribing, and dispensing of drugs will be included. **PREREQUISITE:** MM 077, AA 202, AA 305.

*Offered Fall Semester*

### **AA 403 — MEDICAL ASSISTANT TECHNIQUES 3**

8 credits

The affiliation period of 28 hours per week offers each student the opportunity to practice the skills learned in the College laboratory in supervised clinical experiences. Various sites in hospital clinics, outpatient laboratories, EKG departments, physician's offices, and health maintenance organizations will give the students the best possible background to make career decisions. **PREREQUISITES:** AA 202, AA 305, AL 407.

*Offered Spring Semester*

**Medical Office Administration**  
**(See Office Administration)**

**Microcomputer Specialist**  
**(See Computer Information Systems)**



## Music

### **LM 130 — MUSIC APPRECIATION**

3 credits

A survey course for the general student in which significant works from the several periods of music history will be heard and discussed. This course will be open to all students at the College. Outside listening and reading assignments will be scheduled and attendance at live concerts will be encouraged.

*Offered Fall and Spring Semesters*

### **LM 133 — INTRODUCTION TO PIANO AND THEORY**

3 credits

A beginning piano course for adult students without prior musical knowledge or skills. The course will combine both music theory and a laboratory skills program with major emphasis on the basic structure of keyboard music. Melody, chords, rhythm, form, dynamics and style will be studied by the student at the keyboard and discussed in lecture sessions. Students will be encouraged to proceed as their individual abilities permit, requiring considerable individualization of instruction as they gain technical mastery. Open to all students at the College. **PREREQUISITES:** None.

*Offered Fall and Spring Semesters*

## Natural Science (See Math & Natural Sciences)

## Nuclear Medicine Technology

### **AZ 102 — INTRODUCTION TO NMT**

3 credits

This course serves to introduce the student to Nuclear Medicine Technology. The first weeks are devoted to understanding the rationale and requirements of the program as documented in the Handbook. Covered are: competencies in radiation safety, radiation accident prevention, emergency protocols, clinical protocols, darkroom procedures, survey and wipe techniques. The remainder of the course covers in detail the regulatory aspect of radioactive materials, an overview of the NMT program with the essentials, imaging procedures as an observer, the NMT laboratory, packaging, record keeping, and radioactive disposal. Basic chemistry is also covered. **RESTRICTED TO AZ. PREREQUISITES:** concurrent MP 146, MB 232.

*Offered Fall Semester*

### **AZ 104 — ORIENTATION TO PRACTICUM**

0 credit

This orientation class will provide the student with an understanding of the Nuclear Medicine procedures, terminology associated with the department, and a general overview of the field, thus allowing a smooth transition for the student into the hospital setting. **RESTRICTED TO AZ.**

*Offered Fall Semester*

### **AZ 210 — NUCLEAR IMAGING OF ORGANS**

3 credits

This course initially introduces the methods of localization and biorouting of radiopharmaceuticals used in Nuclear Medicine Technology. Upon completion of the above, the course will move into an organ/system approach dealing with but not limited to the following organ systems: central nervous, endocrine, respiratory, gastrointestinal, therapeutic systems and other miscellaneous systems. The coverage of each organ system will include in detail a discussion of the anatomy and physiology, radiopharmaceuticals used, technical aspects of imaging, as well as the indications and interpretations of the scans. **RESTRICTED TO AZ. PREREQUISITES:** AZ 102, MB 132, concurrent MP 232.

*Offered Spring Semester*

## NUCLEAR MEDICINE TECHNOLOGY

### **AZ 211 — NUCLEAR CARDIOLOGY AND OTHER ORGAN ANALYSIS**

1 credit

Cardiac physiology and pathology are discussed in detail. Patient preparation, radiopharmaceuticals, instrumentation, and data acquisition are studied. Computer analysis of data both qualitative and quantitative for specific cardiac function and measurement are presented. Phase analysis and dual nuclide imaging, and applications are covered. RESTRICTED TO AZ. PREREQUISITES: AZ 302, MB 232.

*Offered Spring Semester*

### **AZ 306 — STATISTICS AND INSTRUMENTATION**

3 credits

The mathematics and rationale underlying the Poisson and Gaussian statistics is explained from basic terminology to linear regression. Basic electronics is covered enough to explain performance characteristics of collimators and phantoms. Quality assurance parameters of the dose calibrator, survey meters, scintillation tubes, and output instrumentation is covered; generator systems are also covered. RESTRICTED TO AZ. PREREQUISITES: AZ 302, MB 132, MM 093, concurrent MP 300.

*Offered Fall Semester*

### **AZ 414 — IN VITRO AND NON-IMAGING STUDIES**

3 credits

Various gastrointestinal studies are covered including the Schillings test. Hematologic and dilution procedures of the red cells and ferrokinetics are presented. Radioassay discusses the theory of immunology and radioassay and enzyme studies. Liquid scintillation instrumentation is covered. RESTRICTED TO AZ. PREREQUISITES: AZ 204, AZ 302.

*Offered Spring Semester*

### **AZ 415 — INDEPENDENT STUDY**

0 credit

This is a course of directed review and study for the student who has completed all the course requirements in Nuclear Medicine Technology but who has failed to pass the simulated registry examination as required for graduation. Successful completion of this course with a passing grade on a comprehensive examination will enable such a student to graduate. RESTRICTED TO AZ.

*Offered Fall Semester*

## **PRACTICUM EXPERIENCE**

Practicum includes the clinical experiences unifying the theory taught in the Nuclear Medicine Technology and support courses. The sequencing of the practicum and competency examinations in specific task areas places gradual expectations on the level of the student so that after over 1900 accumulated clinical hours in twenty-four months, the student can be graduated as a competent NMT, board eligible. The expectations and requirements are outlined in the student handbook as well as in each course syllabus.

### **AZ 103 — PRACTICUM 1**

2 credits

The student is expected to apply classroom knowledge within the clinical setting, demonstrating initiative and enthusiasm to the supervising technologist. The semester competency examinations indicate the ability of the student to integrate theory and clinical practice. Offered two eight-hour days per week for a total of 144 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 104, MP 146, concurrent MB 132, AZ 102.

*Offered Fall Semester*

### **AZ 207 — PRACTICUM 2**

2 credits

This is the second course in the sequence of clinical practicum. Additional competency examinations are required. Offered two eight-hour days per week for a total of 216 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 102, AZ 103, MB 132, concurrent AZ 302, MB 232.

*Offered Spring Semester*

### **AZ 209 — PRACTICUM-SUMMER-1**

5 credits

This is the third in the sequence of clinical practicum. Weekly classes are scheduled for the purpose of clinical discussion and review. A comprehensive examination is required in August, covering the topics included in the first year of study. Grading for the summer session will reflect both the clinical and the comprehensive components of the course. Offered

## NUCLEAR MEDICINE TECHNOLOGY

40 hours per week for a total of 440 clinical hours. Restricted to AZ. PREREQUISITES: AZ 207, AZ 302, and MB 232.

*Offered Summer Semester*

### **AZ 301 — PRACTICUM 3**

5 credits

This is the fourth course in the sequence of clinical experience. Additional competency examinations will be assigned. Offered three eight-hour days per week for a total of 328 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 209, concurrent AZ 204, MP 300.

*Offered Fall Semester*

### **AZ 401 — PRACTICUM 4**

5 credits

This is the fifth course in the sequence of clinical experience. Additional competency examinations will be assigned. Offered three eight-hour days per week for a total of 328 clinical hours. Basic skills in pipetting technique and in the use of the Spectrophotometer will be taught by the Clinical Laboratory Science faculty. Theory and practice of in-vitroimmunoassay procedures will be discussed to include both radioimmunoassay and enzyme immunoassay procedures. RESTRICTED TO AZ. PREREQUISITES: AZ 301, AZ 204, MP 300.

*Offered Spring Semester*

### **AZ 410 — PRACTICUM-SUMMER-2**

5 credits

This is the final practicum course, which involves the integration of two years of classroom learning with clinical practice. The student will be supervised one-on-one with the injection of radiopharmaceuticals as each affiliate permits. Weekly classes are scheduled for the purpose of clinical discussion and review. A comprehensive simulated registry exam is required. Grading for the summer session will reflect both the clinical and comprehensive components of the course. Those students falling below the minimum passing grade of 73 as a result of the comprehensive exam may elect to enroll for an additional semester in an independent study course (AZ 415). Offered 40 hours per week for a total of 360 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 401, AZ 411.

*Offered Summer Semester*

### **AZ 416 — RADIOASSAY LABORATORY PRACTICUM**

1 credit

For two weeks, the student will be assigned to a medical laboratory to implement the procedures involving the in vitro and non-imaging type procedures such as, but not limited to, RAI, T3, T4, and FOLATE studies. Offered 40 hours per week for a total of 80 clinical hours. RESTRICTED TO AZ. PREREQUISITES: AZ 414, AZ 401; concurrent AZ 410.

*Offered Summer Semester*

## Nursing

### **AN 100 — PRIMARY PREVENTIVE INTERVENTIONS 1A**

7 credits

This course is an introduction to contemporary nursing. The conceptual framework utilized is Neuman's Health Care Systems Model. Using principles drawn from Neuman's Model and from the behavioral and biological sciences, the student is guided in developing the ability to use a systematic method for multidimensional assessment of the client. The dimensional variables include physiological, psychological, sociocultural, developmental, and spiritual aspects. Concepts identified are those intended to assist the student to gain knowledge and understanding of the life cycle, nursing process, nursing issues, health needs, basic nutrition/elimination, and pharmacology. Integrated with the theoretical content is planned simulated laboratory practice and planned experiences in health facilities which provide the opportunity to apply the conceptual model and develop basic nursing skill. In order to develop the student's ability to compute medication dosage, completion of Math Module (MM 077) is required by the twelfth (12th) week.

*Offered Fall Semester*



## OCCUPATIONAL THERAPY ASSISTANT

### **AN 201 — SECONDARY/TERTIARY PREVENTIVE INTERVENTIONS 1A** 8 credits

This course builds on the knowledge of the basic concepts of nursing, health, person and environment derived from AN 100. The student moves from primary to secondary and tertiary interventions in caring for the adult and child client/client system. The student focuses on promoting the client's dynamic state of adjustment toward stability and wellness.

Integrated with the theoretical content is planned simulated laboratory practice and planned experiences in acute health care facilities which provide the opportunity to apply the conceptual model and further develop nursing skills.

*Offered Spring Semester*

### **AN 300 — SECONDARY/TERTIARY PREVENTIVE INTERVENTIONS 2A** 9 credits

This course is a continuation of AN 201. The student is more independent in using the nursing process to coordinate care for clients/client systems with more complex health problems.

*Offered Fall Semester*

### **AN 400 — SECONDARY/TERTIARY PREVENTIVE INTERVENTIONS 3A** 9 credits

This course focuses on concerns of individuals and/or families experiencing stressors dealing with childbearing and/or mental health. The developmental approach is used to assist the student to assimilate knowledge and understanding of the behavior which brings a person to crisis in mental health. This course is also concerned with the maintenance of health while coping with the stressors of pregnancy, childbirth, and the integration of the newborn into the family.

The student nurse becomes skilled in using the nursing process, communication techniques, and the Neuman Health Care Systems Model to meet needs of the client/client system in a variety of settings both in acute care and the community. There are two equal clinical rotations: nursing the childbearing family, and mental health nursing. Common content areas are integrated at meaningful periods within the course.

*Offered Spring Semester*

### **AN 410 — INTRODUCTION TO NURSING MANAGEMENT AND LAW** 2 credits

Nursing process is utilized in assisting students to identify their needs and problems in the transition role from student to graduate. This course is designed to help prepare the graduate for professional nursing responsibilities. Discussion topics include basic legal concepts, current issues in nursing, nursing management within an organization, and the role of the nurse within the nursing profession.

*Offered Spring Semester*

## Occupational Therapy Assistant

### **AF 100 — OCCUPATIONAL THERAPY ASSISTANT 1** 4 credits

This course leads to an understanding of occupational therapy as a profession and how it relates to other health services. The student will begin to develop techniques needed to execute the responsibilities of the occupational therapy assistant. Students will have the opportunity to work with a variety of craft media and techniques.

*Offered Fall Semester*

### **AF 200 — OCCUPATIONAL THERAPY ASSISTANT 2** 4 credits

Upon completion of this course, the student will be able to participate or assist in the initial screening of patients, the evaluation of patient needs related to occupational performance, and the collection of data related to client environment. **PREREQUISITE:** AF 100.

*Offered Spring Semester*

### **AF 300 — OCCUPATIONAL THERAPY ASSISTANT 3** 4 credits

Emphasis in this course is on the restoration or development of occupational performance, program implementation, activity analysis, and the administrative and supervisory tasks necessary for effective utilization of community resources. **PREREQUISITE:** AF 200.

*Offered Fall Semester*

# OCCUPATIONAL THERAPY ASSISTANT

## **AF 301 — NEURO PATHOLOGY**

3 credits

This course is a specialized series of lectures geared to the specific neurological dysfunction of the patient. Events or activities leading to overcoming this disability are stressed.

*Offered Fall Semester*

## **AF 400 — OCCUPATIONAL THERAPY ASSISTANT 4**

4 credits

This course will provide the students an opportunity to further develop their ability in the practice of occupational therapy, and to evaluate their competence in practice. Field experience in area hospitals and agencies will offer clinical experience with psychiatric patients as well as patients with physical disabilities.

*Offered Spring Semester*

## **AF 401 — PRACTICUM**

2 credits

A four-week practicum which emphasizes the application of acquired body of knowledge. Clinical sites will be selected according to student/program need. Focus will be specific to develop competencies requisite to an entry-level occupational therapy assistant. PREREQUISITE: AF 400.

## **AF 402 — PRACTICUM**

2 credits

A continuation of AF 401 to provide an in-depth experience in delivering occupational therapy services to clients with a variety of ages and conditions. PREREQUISITE: AF 401.

# Office Administration

## **BK 312 — WOMEN, MANAGEMENT, AND LEADERSHIP**

3 credits

This course is designed to prepare women to be effective participants and leaders in organizational settings. Students will examine the "Holistic Leadership Model for Women" to develop an appreciation of the interactional effects between societal, organizational, and self norms and expectations of our leadership in organizations. Objectives of the course are: 1) to develop an appreciation of the role of cultural differences in our ability to be effective leaders; 2) to increase our understanding of our own leadership styles through the assessment of our attitudes, values, and behaviors on leadership dimensions of particular concern to women in organizations; 3) to develop confidence in our styles of leadership as women and to develop strategies for the effective application of our styles to organizational settings; and 4) to increase our knowledge of leadership theory as well as critique the theory in terms of its relevance to women's experience in organizations. PREREQUISITES: BK 110 or BK 112.

*Offered Periodically*

## **BL 305 — LEGAL SHORTHAND TERMINOLOGY**

3 credits

This course is designed to give the student a background in basic legal terminology, including Latin and French terms. The student who successfully completes this course will be able to correctly spell, pronounce, and define the legal terms presented, in addition to developing the ability to take and transcribe this legal terminology using Gregg shorthand or machine shorthand. Students who plan to work in a legal office as a receptionist/typist, secretary, stenographer, word processor, or research assistant, or in a court-related job such as court reporter, note-reader transcriber, or scopist/transcriptionist will benefit from the course. Reporting students will develop a legal CAT dictionary. This course meets three hours per week. A grade of "C" or better is required. PREREQUISITES: BZ 202 or BC 304.

*Offered Fall Semester*

## **BM 304 — MEDICAL TYPEWRITING**

4 credits

This course is designed specifically for the Medical Office Administration major. This production typing course concentrates on understanding and accuracy in typing medical forms, reports, progress notes, case histories, and correspondence. Typing stamina is built and maintained through 5-minute timed writings using medical material. The minimum speed requirement for this course is 50 words per minute for 5 minutes with 5 or fewer errors from unpracticed medical material. The course meets 5 hours per week. A grade of "C" or better is required for course completion. PREREQUISITE: BZ 201 or equivalent, and a minimum

## OFFICE ADMINISTRATION

speed of 40 wpm for 5 minutes. NOTE: No credit is given unless minimum mailability standards are achieved.

*Offered Fall Semester*

### **BM 303 — MEDICAL OFFICE PRACTICE**

2 credits

This course is designed to familiarize the Medical Administration and Medical Assistant student with the routine business skills pertinent to the medical office. This course includes the development of reception room procedures, telephone techniques, and various other medical office assistant duties. The course meets 2 hours per week. PREREQUISITE: BZ 104. (BZ 113 should be scheduled separately).

*Offered Spring Semester*

### **BO 103 — OFFICE ASSISTANT PROCEDURES**

2 credits

The job of the Office Assistant includes many tasks such as typing, filing, recordkeeping, operating office machines, performing receptionist duties, and doing general office work. The job title assigned to this type of work may be office assistant, general office clerk, office clerk, secretarial assistant, clerical assistant, typist, clerk-typist, records clerk, or office machine operator. This course prepares students for the varied and interesting work found in the modern office. It provides students with the opportunity to acquire the knowledge and skills needed to perform these important duties in a field of work that continues to grow.

*Offered Fall Semester*

### **BO 204 — INTRO. TO MACHINE TRANSCRIPTION**

3 credits

This course is an introduction to basic transcription techniques with emphasis on spelling, grammar, punctuation, number usage, and capitalization. Vocational competence in machine transcription for the clerical office worker is the principal goal. Developing good listening techniques, producing first-time mailable business communications, and learning the importance of machine dictation and transcription in the word processing cycle are the important objectives in this course. PREREQUISITES: BZ 104, BZ 105.

*Offered Spring Semester*

### **BP 106 — MEDICAL ASSISTANT RECORDKEEPING**

1 credit

This course is designed to introduce the medical assistant to the basics of medical office recordkeeping. A brief survey of the methods and procedures of billing, banking and bookkeeping will be presented.

*Offered Spring Semester*

### **BZ 100 — BASIC KEYBOARDING SKILLS**

1 credit

This course is designed for any individual wishing to develop touch keyboarding skills applicable to today's sophisticated electronic typewriter and computer keyboards. A minimum touch keyboarding speed of 20 wpm is required for course completion. Available to the entire STCC community. PREREQUISITES: None.

*Offered Fall and Spring Semesters*

### **BZ 102 — SHORTHAND FOR THE ELECTRONIC OFFICE 1**

4 credits

This course introduces Gregg Shorthand for the information processing era. Emphasis is placed on mastery of basic principles with particular attention to penmanship, and theory development. The course stresses the use of shorthand as a recognized business and industry indicator for predicting promotability and productivity in the electronic office. The minimum speed requirement for the course is 40 words per minute for 2 minutes on familiar material with a minimum of 95% accuracy. The course meets 5 hours per week. A grade of "C" or better is required.

*Offered Fall Semester*

### **BZ 103 — INTRODUCTION TO WORD PROCESSING**

1 credit

This modularized course is designed to acquaint beginners with basic word processing capabilities using Wang and/or IBM systems and varying software. Three five-week sessions will be offered: Session One, Wang Integrated Information Processing; Session Two, IBM PC, WordPerfect; Session Three, IBM PC, Multimate. Students wishing to enroll in



## OFFICE ADMINISTRATION

more than one module may do so under a directed study contract with the instructor. Some typing experience is helpful.

*Offered Fall and Spring Semesters*

### **BZ 104 — TYPEWRITING 1**

4 credits

A foundation course in which current typewriting techniques, speed and accuracy are stressed. Three-minute timed writings are introduced. The student becomes familiar with centering, manuscripts, tabulations and letter style. Class drills and projects aid in individual progress. The minimum speed requirement for the course is 30 words per minute for 3 minutes with 3 or less errors for beginners. Course meets 6 hours per week. A grade of "C" is required.

*Offered Fall and Spring Semesters*

### **BZ 105 — WORD PROCESSING EDITING**

3 credits

Word Processing Editing is a one-semester course which prepares the student for production of mailable business communications in machine transcription and word processing courses. The course emphasizes the basic principles of typewriting style and word division, punctuation style, spelling improvement, capitalization, number and abbreviation styles, proofreading, and editing. Achievement tests will be administered upon completion of each area of emphasis.

*Offered Fall and/or Spring Semesters*

### **BZ 113 — RECORDS MANAGEMENT**

1 credit

In this course the student learns the office procedures involved in records management and in the alphabetic filing arrangement of personal names and the names of businesses, institutions, and government agencies. Subject, numeric, and geographic filing are also presented. New emphasis will be given to electronic filing.

*Offered Fall and Spring Semesters*

### **BZ 114 — AVT/MLS TYPEWRITING 1**

4 credits

This course is designed for students who have previous knowledge and experience with the keyboard. The course is a self-paced typing program in the Office Administration Learning Center, wherein students work independently of other class members. Students use audio-visual multi-media learning systems, slides, and cassettes for instructors. Some group lecture will also be presented. An instructor and/or lab assistant is available at all times to assist students. Emphasis is placed on developing correct typewriting techniques, accuracy, and speed. The minimum speed requirement for the course is 30 words per minute for 3 minutes with 3 or less errors. The course meets 5 hours per week. A grade of "C" or better is required. PREREQUISITE: Touch keyboarding skill.

*Offered Fall and/or Spring Semesters*

### **BZ 115 — STENOSCRIP 1**

3 credits

Stenoscript is an alphabetic system of shorthand that can be learned in one semester. Students will develop a marketable shorthand skill of up to 80 words a minute that will make them more employable and help them earn better salaries. Brief alphabetic forms, abbreviations, business vocabulary, punctuation rules, speed building drills, and a 6,000-word business dictionary are presented. This course is designed for any students seeking stenoscript abilities; however, students wishing a degree in Office Administration **with shorthand** should enroll in **BZ 102 — Shorthand 1**.

*Offered Periodically*

### **BZ 200 — KEYBOARD SKILL BUILDING**

1 credit

This course is designed to assist individuals in building keyboard speed. Individual speed building goals will be determined with a minimum goal of 10 wpm gain for five minutes with five or less errors. Available to the entire STCC community. Students wishing to enroll in more than one module may do so under a directed study contract with the instructor. PREREQUISITE: BZ 100, BZ 104, or BZ 114, or touch keyboarding skill.

*Offered Fall and Spring Semesters*

## OFFICE ADMINISTRATION

### **BZ 202 — SHORTHAND FOR THE ELECTRONIC OFFICE 2**

4 credits

This course continues the refinement of the principles of Gregg Shorthand for the information processing era with further emphasis on basic principles, penmanship, vocabulary, spelling, punctuation, English grammar, and transcription. Since over two-thirds of today's business executives specify secretaries with shorthand, emphasis is placed on the development of speed and accuracy in taking dictation. The concept of computer shorthand will be introduced. The minimum requirement for the course is 60 words per minute for 3 minutes on new material with 95% accuracy. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITES:** BZ 102, BZ 104.

*Offered Spring Semester*

### **BZ 203 — COMPUTER SHORTHAND FOR NON-SHORTHAND WRITERS**

3 credits

Gregg Computer Shorthand applies the basics of Gregg phonetic system in the creation of documents at the microcomputer. Better than "speedwriting," computer shorthand dramatically increases the transcriber's speed and accuracy with sophisticated software that automatically completes shortened words. **PREREQUISITE:** BZ 104 or a touch-typing capability of 35 wpm.

*Offered Fall and Spring Semesters*

### **BZ 204 — TYPEWRITING 2**

4 credits

The course is a continuation of BZ 104 or its equivalent with continued development of speed and accuracy together with a thorough mastery of all letter and envelope styles, interoffice correspondence, rough draft materials and tabulation. The minimum requirement for this course is 40 words per minute for 5 minutes with 5 or less errors. The course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 104 or equivalent.

*Offered Fall and/or Spring Semesters*

### **BZ 205 — WORD PROCESSING CONCEPTS**

1 credit

This lecture course introduces the total concept of word/information processing. It serves as an overview for college students who are interested in learning how to adapt technically advanced office equipment to process words. The course introduces the concept and role of word processing in office automation; explains the rapidly expanding technology and terminology and those career opportunities it offers; and uncovers the mysteries of modern office technology and its effect upon office work and those who perform it. This course meets once a week, and should be taken prior to or concurrently with BZ 306.

*Offered Fall and Spring Semesters*

### **BZ 206 — CIS WORD PROCESSING**

3 credits

This word processing course is designed for majors in the Computer Information Systems department with basic keyboarding skills. The course is taught on IBM PS2s and presents a complete overview of the functions and capabilities of WordPerfect 5.0 word processing software. Students are required to complete specifically designed hands-on projects during class and lab hours. This course meets for three lecture hours per week. **PREREQUISITES:** BZ 100, BZ 101.

*Offered Fall Semester*

### **BZ 214 — AVT/MLS TYPEWRITING 2**

4 credits

This course is a continuation of BZ 114. The course is a self-paced typing program in the Office Administration Learning Center wherein students work independently of other class members. Emphasis is on continued development of speed and accuracy and a thorough mastery of production assignments. The minimum requirement for this course is 40 words per minute for 5 minutes, with 5 errors or less. This course meets 5 hours per week. A grade of "C" or better is required. **PREREQUISITE:** BZ 114 or BZ 104.

*Offered Fall and/or Spring Semesters*

### **BZ 240 — BUSINESS CALCULATING MACHINES**

1 credit

This course gives the student instruction and practice on the ten-key keyboard calculator commonly found in business offices. The application of basic mathematical principles in solving business problems is stressed. This course meets for a total of 15 hours.

*Offered Fall and/or Spring Semesters*



## OFFICE ADMINISTRATION

### **BZ 245 — MICRONUMERICS**

3 credits

This course emphasizes the use of the touch system for micronumeric data entry on the ten-key keypad. A minimum data entry rate of 150 strokes a minute (SAM) is required for course completion. Students will utilize this kinesthetic sense while they solve business applications commonly found in the office, such as basic mathematical operations, fractions and decimals, percents, sales tax, payroll, trade discounts and simple interest.

*Offered Fall and Spring Semesters*

### **BZ 251 — MEDICAL TYPEWRITING**

3 credits

This course is designed specifically for the Medical Assistant. Emphasis is placed on the understanding and production of medical forms, insurance forms, case histories, discharge summaries, medical reports, and medical correspondence. Typing stamina is built and maintained through 5-minute timed writings using medical material. PREREQUISITE: BZ 104 or equivalent.

### **BZ 260 — MEDICAL WORD PROCESSING**

3 credits

This course is designed specifically to familiarize the medical assistant with information processing capabilities using the IBM PC and Word Perfect 5.1 software. Major emphasis is placed on using basic word processing functions in producing documents such as case histories, discharge summaries, medical reports, and medical correspondence. PREREQUISITE: BZ 100 ("C" or better) or BZ 104 (or equivalent).

### **BZ 265 — ADMINISTRATIVE MEDICAL ASSISTANT PROCEDURES**

3 credits

This course is designed to familiarize the medical assistant student with the specific business skills pertinent to the medical office. This course includes developing competencies involving proper telephone techniques, interviewing effectively, handling records management, scheduling and monitoring appointments, transcribing medical documents, managing a physician's professional schedule, and various other office responsibilities. PREREQUISITE: BZ 260.

*Offered Fall Semester*

### **BZ 301 — ADVANCED KEYBOARDING APPLICATIONS**

4 credits

This course combines advanced keyboarding production principles for Executive/Legal and Medical Office Administration majors. Difficult materials in manuscripts, statistical, letter, and rough draft typing present a challenge in problem solving, in addition to preparation of legal and medical documents. The minimum speed requirement for this course is 50 wpm for five minutes with five or less errors. This course meets six hours per week. A grade of "C" or better is necessary to meet graduation requirements. PREREQUISITE: BZ 204 or equivalent.

*Offered Fall Semester*

### **BZ 302 — SHORTHAND SPEED BUILDING**

2 credits

This course stresses the development of speed with continued emphasis on basic Gregg principles and transcription for mailability in the electronic office. The minimum requirement for the course is 80 words per minute for 5 minutes with 95% accuracy. The course meets 3 hours per week. A grade of "C" or better is required. PREREQUISITE: BZ 202, BX 204.

*Offered Fall Semester*

### **BZ 303 — OFFICE ADMINISTRATION PROCEDURES**

2 credits

This course introduces Office Administration majors to a variety of office skills from basic tasks and responsibilities to planning meetings and following through on travel arrangements, as well as collecting and presenting business and statistical information. Students also learn to understand banking services and the significance of certain legal terms and forms. A grade of "C" or better is required. This course meets two hours a week.

*Offered Fall Semester*

### **BZ 304 — MACHINE TRANSCRIPTION**

3 credits

This course emphasizes the techniques and operation of machine transcription equipment. Transcription skills will be acquired through the use of a wide variety of business related dictation — executive, legal, and medical. Grammar, spelling, punctuation, capitalization, proofreading, and the use of reference material will be stressed. The relationship of



machine transcription to the word-processing concept will also be introduced. The course meets three hours per week. **PREREQUISITE:** BZ 204, BZ 105, 40 WPM typing speed.

*Offered Spring Semester*

## **BZ 306 — WORD PROCESSING TECHNOLOGY 1 ON WANG INTEGRATED INFORMATION SYSTEMS**

4 credits

This course is designed to familiarize the student with Wang Integrated information processing equipment and applications. Students will complete basic and advanced word processing assignments using state-of-the-art equipment. The second half of the course will introduce students to glossary writing — the creation of glossary programs that will automatically perform specified integrated word processing functions — and to Wang Desktop Publishing. The knowledge and skills gained in this course are easily transferable to other computer systems. This course meets 5 hours per week. **PREREQUISITE:** BZ 204.

*Offered Fall and/or Spring Semesters*

## **BZ 308 — ADMINISTRATIVE SUPPORT SYSTEMS AND PROCEDURES**

2 credits

In this course the student learns the administrative support procedures involved in records management and effective telephone communications. The student learns to manage the six different filing systems: individual name, company name, subject, geographical location, numeric, and alphanumeric. Upon completion of the course students will be able to communicate effectively on the telephone, handle incoming and outgoing calls, use effective techniques to insure active listening, improve vocal expression, handle stressful calls professionally, and project a positive and professional image.

*Offered Fall and Spring Semesters*

## **BZ 402 — SHORTHAND FOR THE ELECTRONIC OFFICE 3**

4 credits

This course is designed to develop the Executive and Legal Office Administration major's ability to take executive and legal dictation at high rates of speed, and to transcribe rapidly and accurately. Shorthand theory, legal terminology, punctuation, spelling, and vocabulary are stressed throughout the course. The course meets six hours per week. A grade of "C" or better is required. **PREREQUISITES:** BZ 202, BZ 301. **NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Spring Semester*

## **BZ 405 — INFORMATION PROCESSING OFFICE MANAGEMENT**

3 credits

This course exposes the student to typical responsibilities encountered in managing information processing facilities. It will include measuring productivity techniques, employee-training techniques, motivation of personnel, design of forms, controlling distribution of work, investigation of different types of hardware, centralized and decentralized services, and planning the office. Meets 3 hours per week. A grade of "C" or better is required of Word Processing Management majors. **PREREQUISITE:** BZ 205.

*Offered Spring Semester*

## **BZ 406 — WORD PROCESSING TECHNOLOGY**

4 credits

This course is designed to familiarize the student with information processing capabilities on the IBM PC. Major emphasis is placed on using basic to advanced functions in processing business documents using WordPerfect 5.1 software — including Desktop Publishing capabilities. The remainder of the semester will be spent on learning the basics of Lotus 1-2-3 spreadsheets. The student will also have an understanding and appreciation of how data processing integrates with word processing using DOS (Disk Operating System) procedures. This course meets five hours per week. **PREREQUISITE:** BZ 204. A grade of "C" or better is required. **NOTE:** No credit is given unless minimum mailability standards are achieved.

*Offered Fall and/or Spring Semesters*

## **BZ 416 — ADVANCED WANG WP PLUS WORD PROCESSING APPLICATIONS**

4 credits

This course places emphasis on advanced information processing applications on Wang Integrated Information Systems (VS and PC). Particular emphasis is placed on WP Plus, WP Plus Glossary, WP Plus Desktop Publishing, utility functions, and Wang PC operations. Work will be produced using state-of-the-art equipment, including text/image scanners and

## OFFICE ADMINISTRATION

desktop laser printers. This course meets six hours per week. PREREQUISITE: "B" or better in BZ 306.

*Offered Periodically*

### **BZ 397 — OFFICE ADMINISTRATION COOPERATIVE EDUCATION**

3 credits

This course is designed for students in the Executive, Medical, and Legal Office Administration programs who have completed 30 credit hours. The Cooperative Education program allows advanced students to go out into the business world and participate in paid employment directly related to their major field of study. Students will attend seminar sessions on campus in addition to a minimum of ten hours per week of practical field observation and on-the-job experience in area companies approved by the Cooperative Education Office and the Office Administration Department. A faculty coordinator will meet routinely with each student to review work completed. PREREQUISITE: 30 credit hours completed and department approval.

*Offered Fall Semester*

### **BZ 497 — OFFICE ADMINISTRATION COOPERATIVE EDUCATION**

3 credits

This course is designed for students in the Executive, Medical, and Legal Office Administration program who have completed 45 credit hours. The Cooperative Education program allows advanced students to go into the business world and participate in paid employment directly related to the major field of study. Students will attend seminar sessions on campus in addition to a minimum of 10 hours per week of practical field observation and on-the-job experience in area companies approved by the Cooperative Education Office and the Office Administration department. A faculty coordinator will meet routinely with each student to review work completed. PREREQUISITE: 45 credit hours for degree students and 15 credit hours for certificate students, and department approval.

*Offered Spring Semester*

## Philosophy

### **LX 110 — PHILOSOPHY 1**

Philosophy is part of the study of the self; the search for reasons for our values and beliefs; and for good reasons for our reasons. The course includes a critical examination of the traditional questions in ethics, politics, religion and art. PREREQUISITES: None.

### **LX 210 — PHILOSOPHY 2**

3 credits

This course will examine in greater detail some of the classical problems along with some contemporary problems introduced in Philosophy 1. Students will be required to write one critical essay and one annotated bibliography on assigned readings. This course will feature guest lectures by members of other departments of STCC and outside participants.

## Physical Therapist Assistant

### **AP 100 — PHYSICAL THERAPIST ASSISTANT 1**

4 credits

This course provides a survey of Physical Therapy and the role of the assistant. Professional ethics and responsibilities are discussed. Emphasis is on the performance of basic skills used by the Physical Therapist Assistant. These include lifting and transfers, patient mobility, bed-making of the occupied bed, ambulation training, range of motion, vital signs, aseptic procedures, bandaging, use of the tilt table, and mechanical traction. Clinical visits will be included for initial patient contact.

*Offered Fall Semester*

### **AP 200 — KINESIOLOGY**

4 credits

This course is designed to develop an understanding of the dynamics of human motion through the study of muscles and joints. PREREQUISITE: Anatomy & Physiology 1 (MB 132).

*Offered Spring Semester*

**AP 201 — PHYSICAL THERAPIST ASSISTANT 2**

4 credits

This course provides lecture and laboratory work in the study of the various modalities and in physical therapy and the physiological effects of these modalities. Principles and practice of massage techniques and chest physical therapy are also included in the course content. PREREQUISITE: AP 100.

*Offered Spring Semester*

**AP 300 — PATHOLOGICAL CONDITIONS**

3 credits

This course presents the tissue changes resulting from traumas, disease, and degenerative processes. The course acquaints the student with the orthopedic, neurological, and general medical/surgical conditions encountered in treating patients. PREREQUISITES: MB 131, MB 232, AP 100, AP 200, AP 201.

*Offered Fall Semester*

**AP 301 — PHYSICAL THERAPIST ASSISTANT 3**

4 credits

This course provides the opportunity to study the mechanical and physiological concepts of exercise problems with emphasis on the problems related to the patient's motor involvement. Laboratory experience is provided to develop the skill of the student in application of various exercise equipment. Practicum and clinical observation will be included. PREREQUISITES: AP 100, AP 200, AP 201. Honors component available.

*Offered Fall Semester*

**AP 302 — MUSCLE TESTING**

1 credit

This is an introductory course in the manual testing of the gross strength of the major muscle groups of the human body. PREREQUISITE: AP 200.

*Offered Fall Semester*

**AP 403, AP 404 — SUPERVISED CLINICAL EXPERIENCE**

6 credits each

Supervised practice in selected clinical settings. PREREQUISITES: All other courses must be completed by the end of the third semester.

*Offered Spring Semester*

**AP 402 — PHYSICAL THERAPIST ASSISTANT SEMINAR**

1 credit

The purpose of these seminars is to correlate the academic and technical courses with the practical clinical work. They are alternately scheduled with the affiliation assignments so that students may return to the classroom for sharing and discussion.

*Offered Spring Semester*

## Physics

**MP 090 — BASIC SCIENCE**

4 credits

Introduction to physical science, using very frequent experiments and simple arithmetic. Emphasis on development of the student's confidence, initiative, and self-reliance. Includes volume by water displacement; weight changes in reactions; freezing and boiling points; densities of solids, liquids and gases; solubilities. Constant proportions from electrolysis of water and from synthesis of a salt. Atoms and molecules; spectra; radioactivity. PREREQUISITE: None. The course serves as preparation for other college science courses and is suitable for students who have taken no previous science.

*Offered Fall and Spring Semesters*

**MP 119 — TECHNICAL PHYSICS**

4 credits

An overview of physics in one semester, intended primarily for students in Technology programs. Mechanics topics include vectors, statistics, linear and circular motion, work and energy. Electric fields and circuits, waves, light, and atomic physics are also treated. Experimentation and problem-solving are stressed. PREREQUISITE: MM 101 (Trigonometry).

*Offered Fall and Spring Semesters*

**MP 120 — TECHNICAL PHYSICS FOR ELECTRONICS**

4 credits

A course on mechanics, energy, electricity, magnetism and light. Lectures, demonstrations, problem assignments and laboratory work carried on in the areas of: motion, energy, con-



## PHYSICS

servation, electromagnetic induction, EM radiation and optics. Three-hour laboratory. **PREREQUISITE:** MM 101 (Trigonometry).

*Offered Spring Semester*

### **MP 130 — COLLEGE PHYSICS 1**

4 credits

A non-calculus, college level physics course for liberal arts transfer students or students of the life sciences. Topics include motion, mass, force, conservation laws, momentum, gravitation, work, energy, and heat. The problems and laboratory are designed with biological applications. There is a three-hour laboratory per week. **PREREQUISITE:** MM 093 (Algebra).

*Offered Fall Semester*

### **MP 230 — COLLEGE PHYSICS 2**

4 credits

A non-calculus, college level physics course for liberal arts transfer students or students in the area of pre-med, pre-dental, pre-vet, or the life sciences. Topics include electrostatics, basic electronics, solid state, circuit analysis, alternating current, optics, construction of the nucleus, radioactivity, and Bohr model. Three-hour laboratory. **PREREQUISITE:** MM 093 (Algebra).

*Offered Spring Semester*

### **MP 132 — UNIVERSITY PHYSICS 1**

4 credits

Rigorous introductory course covering mechanics, statics, conservation of energy and momentum, conservation of angular momentum, and simple harmonic motion. Three-hour laboratory. **PREREQUISITE:** MM 155 (Calculus 1).

*Offered Spring Semester*

### **MP 232 — UNIVERSITY PHYSICS 2**

4 credits

Continuation of MP 132. Topics include: electrostatics, Coulomb's Law, Gauss's Law, Kirchoff's Laws, magnetostatics, Ampere's Law, Faraday's Law and Lenz's Law. Demands command of calculus, vector algebra, and vector analysis, and a three-hour laboratory. **PREREQUISITE:** MP 132 and MP 255 (Calculus 2).

*Offered Fall Semester*

### **MP 255 — PHOTOGRAPHIC SCIENCE**

3 credits

Photography is the permanent recording of images through the action of light and chemistry. In this course we will take a close look at this phenomenon; we will study its theories, examine its materials, and discuss its measurement. Among the sub-topics to be covered are photographic history, chemistry, mathematics, densitometry, sensitometry, light, and color. The course will be organized as two weekly lectures with a weekly laboratory session. The aim of this course is to provide students with a firm foundation and understanding of the photographic process.

*Offered Spring Semester*

### **MP 332 — UNIVERSITY PHYSICS 3**

4 credits

Continuation of MP 232. Topics include: Maxwell's equations, electromagnetic waves, oscillators, physical and geometrical optics (including matrix approach to optics); concepts of special relativity; Bohr model of the atom, introduction to Schrodinger equations, wave functions and probability amplitudes. Three-hour laboratory. **PREREQUISITE:** MP 232 and MM 355 (Calculus 3).

*Offered Spring Semester*

### **MP 300 — RADIOLOGIC PHYSICS 1**

4 credits

Topics covered are basic mechanics, mass, force, energy, work momentum, and electrostatics. Special topics covered are the nature of the photon, ionizing radiation, photoelectric effect, Compton effect, and pair production. All radiation attenuation processes are covered in detail. Laboratory application in radiologic health sciences. Calculator is required. Open to other students by permission of instructor. Two-hour laboratory. **PREREQUISITE:** MM 093.

*Offered Fall Semester*

### **MP 321 — INTRODUCTION TO LASER PHYSICS**

1 credit

This course is designed specifically for operating room personnel to understand the nature of electromagnetic waves and, in particular the laser. Laser interaction to critical sites is discussed in detail. Risk versus benefit to the patients and to personnel is discussed. FDA and

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BRH regulations are discussed. Applications in surgery include all modalities. RESTRICTED TO AO. Other students interested in laser protection may elect MP 322.

*Offered Fall Semester*

### **MP 330 — GEOMETRICAL OPTICS**

4 credits

This course is the first of a two-semester sequence covering basic optical theory and components. Each course consists of three-hour lecture sessions and a three-hour lab. Geometrical optics deals with the rectilinear propagation of light and the elementary treatment of image formation, lenses, mirrors, prisms, fiber optics, ray tracing, aberrations, optical system design, and optical instruments. The laboratory section parallels the lectures and familiarizes the student with optical laboratory components and procedures. Senior standing.

*Offered Fall Semester*

### **MP 351 — COMPLEX ANALYSIS**

4 credits

This course covers the essential background needed in different fields of science and engineering. Topics covered include analytic functions, singularities of analytic functions, Cauchy Riemann relations, conformal mappings, complex path integration, poles, residues, and cuts. PREREQUISITES: Calculus 1 and Calculus 2.

*Offered Fall and Spring Semesters*

### **MP 400 — NUCLEAR PHYSICS 1**

3 credits

The nuclear properties of the atom are covered, describing energy levels of stable and unstable nuclei, which are then related to radioactive decay (gamma, beta, alpha, fission). The production and detection of ionizing radiation are covered, with special emphasis on medical applications. The remainder of the course is devoted to radiation dosimetry with problem solving using exponentials. RBE, LET, HVL, and MPDs covered. Calculator is required. Two-hour laboratory. PREREQUISITE: MM 093 (or placement above MM 093). Required for AY, AZ. Open to all students.

*Offered Spring Semester*

### **MP 150 — INDEPENDENT STUDY PHYSICS 1**

1, 2, 3, or 4 credits

Independent study or laboratory project in physics under direction of instructor. Student may propose project or elect to undertake a project of instructor's choice. PREREQUISITE: Permission of instructor.

*Offered Fall/Spring/Summer Semesters*

### **MP 250 — INDEPENDENT STUDY PHYSICS 2**

1, 2, 3, or 4 credits

A continuation of MP 150. PREREQUISITE: Permission of instructor.

*Offered Fall/Spring/Summer Semesters*

## Plant Science (See Landscape/Plant Science)

## Political Science

### **NI 100 — AMERICAN GOVERNMENT AND POLITICS**

3 credits

An analysis of the way in which politics and political institutions work in American society. The major problems of American democracy are examined; their political, social and economic implications explored; Constitutional rights and freedoms; the federal power structure; changing governmental institutions. PREREQUISITES: None.

*Offered Fall Semester*

### **NI 900 — DIRECTED STUDY IN POLITICAL SCIENCE**

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon approved, student-professor contracts.

# Psychology

## **NP 100 — GENERAL PSYCHOLOGY**

3 credits

This introductory course identifies those scientific methods used to study human behavior. Discussion centers around the contribution of heredity, environment, learning, perception, motivation and emotion in shaping our individual personalities. Honors component available.

*Offered Fall and Spring Semesters*

## **NP 101, 102, 103 — GENERAL PSYCHOLOGY MODULES**

3 credits

This three-credit independent study course is divided into three one-credit modules, and offers an independent, flex-time approach to mastering an introductory, college-level discipline. In this course, the student will cover all the same topics presented in STCC's other General Psychology courses, and will use the same text. The testing of a student's comprehension will include an extensive computer-generated test for each chapter with essay questions, as well as comprehensive examination for each module.

A student may be accepted into NP 101, 102, and 103 (one credit per module) during Registration or Pre-Registration; however, under special circumstances a student may register after a semester is underway.

### **NP 101 — GENERAL PSYCHOLOGY — MODULE 1**

1 credit

This module covers general perspectives, careers, scientific study of behavior, states of consciousness, learning by classical and operant conditioning, and memory.

### **NP 102 — GENERAL PSYCHOLOGY — MODULE 2**

1 credit

This module includes language theory and development, concept formation, problem solving, and intelligence. It examines motivation and psychological development. **PREREQUISITE:** NP 101.

### **NP 103 — GENERAL PSYCHOLOGY — MODULE 3**

1 credit

This module explores personality theory and measurement, stress and adjustment, and social psychology. **PREREQUISITE:** NP 102.

## **NP 109 — HUMAN RELATIONS**

3 credits

This is a course designed to build a strong self image. Each student has an opportunity to understand that he/she is a functioning human being in the twentieth century and that this is not a task to be taken lightly. He/she will realize that we are all similar in many ways and that we are also different. This course will help the student establish a philosophy of life that will be very helpful in his/her communications and awareness of the future.

*Offered Fall and Spring Semesters*

## **NP 305 — CHILD PSYCHOLOGY**

3 credits

This advanced course examines the major influences on a child's physical, cognitive, and social development from conception through early childhood. Information is presented in chronological order to give an integrated view of the child at each major phase of development. An examination of the basic theories and contemporary research suggest some answers for more effective parenting. **PREREQUISITE:** NP 100.

*Offered Fall Semester*

## **NP 350 — ADOLESCENT PSYCHOLOGY**

3 credits

This advanced course examines the major influences on a person's physical, cognitive and social development from middle childhood through adolescence. An examination of the basic theories and contemporary research is presented for each major phase in order to give an integrated view of development in humans during this time of their lives. **PREREQUISITE:** NP 100.

*Offered Spring Semester*

## **NP 400 — PRINCIPLES OF NORMAL/ABNORMAL BEHAVIOR**

3 credits

A general introduction into the origin, development, degrees of mental disorganization, and the methods of coping with psychological dysfunction. Inquiry will also be made into the



# RADIATION THERAPY TECHNOLOGY

theoretical and applied approaches of several of the major schools of thought with regard to helping services. **PREREQUISITE:** NP 100.

*Offered Fall and Spring Semesters*

## **NP 406 — PSYCHOLOGICAL ASSESSMENT OF CRIME**

3 credits

This course analyzes the types of people that commit crimes, and presents a psychological profile of the criminal offender. Emphasis is placed on the following criminal situations: arson, rape, terrorism, murder, and political assassination.

## **NP 900 — DIRECTED STUDY IN PSYCHOLOGY**

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

# Radiation Therapy Technology

## **AY 104 — INTRODUCTION TO RADIATION ONCOLOGY**

3 credits

This course begins with an orientation to the profession followed by a discussion of cancer detection, pathology, and disease management, comparing various treatment modalities. Students are introduced to the biological effects of radiation and to the modes of radiation therapy, including a comparative study of teletherapy units, radioisotopes, and teletherapy vs. brachytherapy. Students are introduced to quality assurance procedures as they apply to radiation therapy. **RESTRICTED TO AY.**

## **AY 208 — PRACTICUM**

5 credits

The 10-week summer practicum courses provide maximum opportunities for students to develop their clinical skills. Students spend 30 hours per week in clinical affiliations, supplemented by some afternoon classes on campus. These include guest lectures, discussion of selected topics, and review sessions for reinforcement and integration of prior learning. Students will be tested periodically on the classroom content, and the grade for the summer will reflect both the clinical and classroom components.

## **AY 209 — DOSIMETRY AND TREATMENT PLANNING**

4 credits

This course covers the fundamentals of clinical dosimetry and treatment planning, beginning with a discussion of dosage in radiation therapy, progressing to pre-treatment procedures and to the principles of treatment planning. Consideration is given to a wide range of therapy techniques and modalities, brachytherapy as well as teletherapy; and students develop facility with dose/time calculations. **PREREQUISITE:** AY 104.

## **AY 304 — CLINICAL ONCOLOGY 1**

3 credits

This course includes an examination of oncologic pathology and treatment principles, followed by an investigation of cancer of various body sites and systems. Discussion includes etiology, and epidemiology, pathology, staging, symptoms, treatment, prognosis and patient care for each site under consideration, with special emphasis on the role of radiation in cancer management and its relationship to other treatment modalities. **PREREQUISITES:** MB 232, **RESTRICTED TO AY.** Honors component available.

*Offered Fall Semester*

## **AY 303 — RADIOGRAPHIC IMAGING OF HUMAN STRUCTURE**

1 credit

This course will provide fundamentals of radiographic exposure techniques, latent image formation, processing of radiographs, and the opportunity to examine human structure as it appears through medical imaging. The course is designed for non-radiographers.

## **AY 407 — PRACTICUM**

5 credits

The 10-week summer practicum courses provide maximum opportunities for students to develop their clinical skills. Students spend 30 hours per week in clinical affiliations, supplemented by some afternoon classes on campus. These include guest lectures, discussion of selected topics, and review sessions for reinforcement and integration of prior learning. Students will be tested periodically on the review content, and the grade for the summer will reflect both the clinical and classroom components.

# RADIATION THERAPY TECHNOLOGY

## **AY 409 — CLINICAL ONCOLOGY 2**

3 credits

This course concludes the discussion of the etiology, epidemiology, pathology, staging, symptoms, treatment, and prognosis of cancer with respect to body sites and systems. **PREREQUISITE:** AY 304. **RESTRICTED TO AY.** Honors component available.

*Offered Spring Semester*

## **AY 103, AY 207, AY 301, AY 311, AY 401, AY 411 — PRACTICUM**

2, 3, 5, 5, 5, 5 credits

Supervised clinical experience is provided in the Radiation Therapy Department of an affiliated hospital under the direction of certified radiation therapists. Clinical training will be provided on a range of treatment machines, in treatment simulation, and in computerized treatment planning. Half-semester rotations are required in the Physics Department.

# Radiography

## **AX 001 — CLINICAL ORIENTATION 1**

No credit

This course provides an introduction to the affiliate, the affiliate policies and procedures, and the affiliate Radiology Department. The course is designed to assure the affiliated hospital that the students will not compromise their high standards of health care. Clinical Orientation 1 is a prerequisite for Clinical Practicum 1.

*Offered Winter Intersession Only*

## **AX 111 — RADIOGRAPHIC POSITIONING 1**

4 credits

This course provides the basis of performing anatomic positioning. Anatomic positioning is the "art" of radiography. The final product, the radiograph, is dependent upon proper anatomic positioning, as well as the proper technical factors. The ultimate purpose of all positioning is to visualize specific parts of the body, free from superimposition of anatomic structures. This course will include development of psychomotor skills in the application of ionizing radiation to produce diagnostic radiographs of the appendicular skeleton. **PREREQUISITES:** LE 095, MM 093 or their equivalent. Concurrent AA 101, AA 210, MB 132, AX 112, AX 114.

*Offered Fall Semester*

## **AX 112 — IMAGE PRODUCTION AND EVALUATION**

2 credits

An introduction to the basic imaging techniques including an examination of the recording media used, i.e., film, tape, selenium plates and TV. Manual and automatic processing is covered along with intensifying screens, and the characteristics of the image, density, contrast, detail, and distortion. **PREREQUISITE:** MM 093 or equivalent. Concurrent MB 132, AX 111, AA 101, AA 210, AX 114.

*Offered Fall Semester*

## **AX 114 — RADIATION PROTECTION**

1 credit

The nature of ionizing radiation and its biological effect on the human are discussed. The NCR and Commonwealth of Massachusetts rules and regulations relating to radiation protection and monitoring of personnel and patient protection are presented to the level where the student understands risk versus benefit of medical radiation. Radiation detection equipment and instrumentation for clinical and emergency situations are covered. The human radiobiological response is covered. Open to other students by permission of instructor. **PREREQUISITE:** Algebra 2. **RESTRICTED TO AX, AY, AZ.**

*Offered Fall Semester*

## **AX 211 — RADIOGRAPHIC POSITIONING 2**

4 credits

This course is a continuation of AX 111, Positioning 1. It deals with the anatomic positioning of the spine and the ribs. Also, assisting the Radiologist in contrast instillation during exams of the urinary system, gastrointestinal, and biliary tracts. **PREREQUISITES:** AX 111, AX 112, MB 132, AA 101, AA 210.

*Offered Spring Semester*

## **AX 212 — EQUIPMENT OPERATION AND MAINTENANCE**

2 credits

Sequential to AX 112 — an in-depth examination of the equipment used in radiography, starting with the x-ray tube and the rectifying circuit, tube ratings, and the cooling charts for multiple exposures, phototiming, image intensification, stereography, and tomography. Problem solving for different grids is covered. **PREREQUISITE:** AX 112.

*Offered Spring Semester*

## **AX 213, 214, 313, 415, 416 —**

### **CLINICAL PRACTICUM 1, 2, 3, 4, AND 5**

2, 5, 3, 3, 5 credits

These courses provide a structured clinical experience to assist the student in the application of didactic and laboratory practice in clinical settings, under the supervision of registered technologists. This experience includes an examination of the student's competence, and a continuing evaluation of his professionalism. Clinical Orientation 1 and 2 are required prior to Clinical Practicum 1 and 4, respectively. Successful completion of each course is required to progress to the next practicum.

**NOTE:** Clinical orientation is offered during the Winter Intersession only.

*Offered Spring, Summer, Fall, Spring, Summer Semesters*

## **AX 311 — SPECIAL PROCEDURES IN RADIOGRAPHY**

2 credits

A highly-trained team of professionals is necessary to successfully execute the techniques required to obtain diagnostic information during a special procedure. Special procedures are commonly employed to visualize the vascular system or similar hollow organs or vessels. This course will deal with the procedures, the equipment utilized, and the preparation and performance of the procedures. **PREREQUISITES:** MB 232, AX 111, AX 211. Concurrent AX 313, AX 314.

*Offered Fall Semester*

## **AX 314 — RADIOGRAPHIC POSITIONING 3**

3 credits

This course is a continuation of AX 211, Positioning 2. It deals with the positioning of the cranium and special views (projections) of the anatomic structures in AX 111 and AX 211. The major emphasis will be placed on the various positions of the cranium. **PREREQUISITES:** AX 211, MB 232.

*Offered Fall Semester*

## **AX 411 — RADIOLOGIC PATHOLOGY**

1 credit

This course will provide the student with an introduction to the concepts of disease. The recognition of gross pathology and its relevance to modifying radiographic procedures. **PREREQUISITES:** AX 314, AX 212, and AX 311.

*Offered Spring Semester*

## **AX 412 — ANCILLARY THEORY AND PROCEDURES**

1 credit

A detailed examination of those aspects of radiology not normally included in a structured curriculum. Included will be: computerized axial tomography, nuclear magnetic resonance, (MRI), digital radiography, advanced calibration, sonography, nuclear medicine, therapy, etc.

*Offered Spring Semester*

## **AX 413 — SEMINAR/QUALITY CONTROL**

3 credits

This course will provide the procedures followed in a quality control program, and will examine the benefits of such a program to the radiology department. Also, a review of the entire curriculum of the program, including film critique, will be provided. **PREREQUISITES:** AX 311, and AX 314.

*Offered Spring Semester*

## **AX 414 — RADIATION BIOLOGY**

1 credit

This course includes a detailed examination of the effects of radiation on the cell, the systems, and the human being, including both long-term and short-term effects, somatic and genetic effects. **PREREQUISITES:** MB 132, MB 232, and AX 114. **RESTRICTED TO AX, AY, AZ.**

*Offered Spring Semester*



## RADIOGRAPHY

### **AX 417 — ADVANCED RADIATION PROTECTION**

1 credit

This five-week module is a continuation of AX 114. Topics covered include radioactivity and problem solving relating to half-lives and decay, half-value layer, and attenuation. Calculations on person and time spent in radiation areas will be covered thoroughly. Dosimetry will begin with RBE, LET, f-factors, and will cover NRC and NCRP requirements on MPDs, recordkeeping, and monitoring. Time, distance, and shielding are emphasized throughout the course. Calculator with exponentials required. **PREREQUISITES:** MM 093, MP 300, AX 114. Concurrent with AY 414. **RESTRICTED TO AX.**

*Offered Spring Semester*

## Respiratory Care

### **AR 104 — INTRODUCTION TO RESPIRATORY CARE**

3 credits

This introductory course includes a study of cardiopulmonary anatomy/physiology, arterial blood gas interpretation, introduction to cardiopulmonary disease, medical terminology, and ethics. The course is designed to provide the student with fundamental knowledge and theory which will enable the student to understand the more complex theories and practice of respiratory care in subsequent courses.

*Offered Fall Semester*

### **AR 105 — RESPIRATORY CARE 1**

4 credits

This course is designed to be a study of respiratory care equipment and the physical principles involved in its use. Among areas to be discussed are: oxygen transport, gas physics, medical gas therapy, gas analyzing equipment, CPR, basic airways, and bedside measurement and monitoring devices. The didactic portion consists primarily of lectures, and the clinical hours provide for application of principles learned in the classroom.

*Offered Fall Semester*

### **AR 205 — RESPIRATORY CARE 2**

4 credits

This is the second part of a two-semester course which integrates physical principles with their application to clinical equipment. Application of humidity and aerosol, infection control, hyperinflation therapy and mechanical ventilators will be discussed. The didactic portion consists primarily of lectures, and the clinical hours provide for application of principles learned in the classroom. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140.

*Offered Spring Semester*

### **AR 206 — RESPIRATORY CARE 3**

3 credits

This course includes the study of pharmacological agents used in the treatment of cardiopulmonary disease. Equipment and current trends in airway care management will be examined. The general application of applied mathematics for respiratory care will be covered. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140.

*Offered Spring Semester*

### **AR 213 — RESPIRATORY CARE 4**

6 credits

A study of the principles and theories of chest physiotherapy. An examination of rehabilitation techniques and respiratory care home care. The didactic portion consists primarily of lectures, and the clinical hours provide for application of principles learned in the classroom. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 121.

*Offered Summer Session*

### **AR 303 — INTENSIVE RESPIRATORY CARE**

3 credits

An in-depth study of the principles of continuous mechanical ventilation. Theory/application of mechanical ventilation will be discussed in detail. **PREREQUISITE:** AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 212, AR 213.

*Offered Fall Semester*

## RESPIRATORY CARE

### **AR 305 — PULMONARY FUNCTION TESTING**

3 credits

This course will examine in detail equipment, diagnostic testing, interpretation, and the patterns of various respiratory diseases. Students learn how to use equipment in various pulmonary function labs. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, AR 213.

*Offered Fall Semester*

### **AR 306 — RESPIRATORY CARE APPLICATION/CLINICAL SCIENCES 1**

2 credits

This course is offered over two semesters, and encompasses respiratory anatomy and physiology designed to prepare the student for clinical judgment in respiratory care. Topics related to respiratory function, acid-base balance, and disease processes are included. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, AR 213.

*Offered Fall Semester*

### **AR 307 — RESPIRATORY CARE 5**

6 credits

An extensive study of the principles and theories of current trends in airway care management, physical assessment, chest radiology, laboratory tests, and electrolytes. Equipment and current trends in these areas will be examined. The didactic portion consists primarily of lectures, and the clinical hours provide application of principles learned in the classroom. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, AR 213.

*Offered Fall Semester*

### **AR 405 — RESPIRATORY CARE PRACTICUM**

3 credits

The clinical, bedside, and laboratory application of respiratory care is presented, utilizing the facilities of affiliated clinical sites and College laboratory under supervision of hospital respiratory care practitioners, physicians, and College faculty. Clinical affiliation is designed to expose students to an environment in which they can practice respiratory care. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 121, AR 213, AR 303, AR 305, AR 306, AR 307.

*Offered Spring Semester*

### **AR 406 — RESPIRATORY CARE APPLICATION AND CLINICAL SCIENCES 2**

4 credits

This is the second part of a two-semester course encompassing respiratory care anatomy/physiology and disease process. The didactic portion consists primarily of lectures and the clinical hours provide for application of principles learned in the classroom. **PREREQUISITES:** AR 104, AR 105, MB 132, AR 205, AR 206, MB 232, MB 121, AR 213, AR 303, AR 305, AR 306, AR 307.

*Offered Spring Semester*

### **AR 408 — RESPIRATORY CARE 6**

3 credits

This course is a study in hemodynamic monitoring, electrocardiography, and preparation for the NBRC advanced practitioner exam. Students will learn how to take the RRT simulation exam. The final exam will be self-assessment exam (NBRC Registry exams), written and simulation. **PREREQUISITES:** AR 104, AR 105, MB 132, AR 205, AR 206, MB 232, MB 121, AR 213, AR 303, AR 305, AR 306, AR 307.

*Offered Spring Semester*

### **AR 409 — NEONATAL/PEDIATRIC CARE**

3 credits

This course offers the foundation of neonatal and pediatric respiratory care, from anatomic and physiologic development of the cardiopulmonary system to various disease states. The course will focus on etiology, pathophysiology, diagnosis, treatment, and prevention for each disease state. Evaluation of the neonatal and pediatric patient will include history, physical and clinical assessments as well as radiologic evaluations. **PREREQUISITES:** AR 104, AR 105, MB 132, MB 140, AR 205, AR 206, MB 232, MB 121, AR 213, AR 306, AR 303, AR 305, AR 307.

*Offered Spring Semester*

## Small Business Management Option (See Business Administration)

### Social Sciences (See Economics, History, Sociology/Anthropology, Psychology and Education, Political Science)

### Sociology/Anthropology

#### **NS 100 — INTRODUCTION TO SOCIOLOGY**

3 credits

An introductory course designed to acquaint the student with a working knowledge of the concepts used by sociologists and with the well-established generalizations in the field. Topics to be studied include socialization, culture, population, group processes and social stratification.

*Offered Fall and Spring Semesters*

#### **NS 110 — INTRODUCTION TO ANTHROPOLOGY**

3 credits

A general introduction to social and cultural anthropology which will explore among the diverse cultures of the world some of the possible variations in technology, economics, social and political organization, art, religion and ideology. Each year the world grows smaller in each area of communication, transportation, and general economic interdependence. However, an understanding of cultural differences among the people of the world is often lacking. Cultural anthropology provides a systematic description and comparison of the ways of life of groups of people throughout the world. An appreciation of the solutions to human problems developed by other cultures allows not only greater perception of our own way of life, but also of the values and goals of others. The fundamental objective of this course is to provide insight into various ways that people respond to basic human needs.

*Offered Fall and Spring Semesters*

#### **NS 160 — MULTICULTURAL/MULTIETHNIC U.S.A.**

3 credits

This interdisciplinary course is designed to assist students in understanding the rich and vast cultural and historical contributions of the diverse ethnic groups and subgroups that have contributed to the American experience and continue to influence it. Students learn to appreciate and take pride first in their own ethnic and cultural/familial backgrounds, and then study selected ethnic groups prevalent in the community. The dangers of stereotyping and generalizations are discussed in order to understand and prevent the problems of racism, prejudice, and discrimination. Terms and concepts such as the melting pot, cultural pluralism, cultural blindness, cultural imposition, ethnocentrism, classism, sexism, ageism, multiculturalism, ethnicity, global competency, and global interdependence are discussed in class in an effort to share with the students a vision of a truly American dream — a multicultural/multiethnic USA. PREREQUISITE: NS 100; LE 100 strongly recommended.

*Offered Fall and Spring Semesters*

#### **NS 200 — SOCIAL PROBLEMS**

3 credits

This course applies the principles and concepts of sociology to selected aspects of contemporary American society, such as the areas of poverty, crime, urban change, population, alcoholism, role definitions, minority group relations and drug addiction. PREREQUISITES: NS 100 or NS 110.

*Offered Fall and Spring Semesters*



## STUDENT DEVELOPMENT

### **NS 250 — SOCIOLOGY OF THE FAMILY**

3 credits

The course will focus on the historical development and change of the family, its structure and functions and its relationship to the other major institutions of society. Although the primary focal point will be the American family, cross-culture comparison will be used especially in the study of marriage and kinship practices. Strong emphasis will also be placed on family change and the family as a social problem including such topics as the single parent, changing sex roles and communes. **PREREQUISITES:** NS 100 or NS 110. **Not offered every year.**

*Offered Fall and Spring Semesters*

### **NS 300 — SOCIOLOGY OF AGING**

3 credits

This course examines aging as a social phenomenon in the United States. Topics include social factors in the aging process, statistical distribution and ecological conditions of aging, and economics, public policy and politics as they relate to old age. **PREREQUISITE:** NS 100 or NS 110. **Not offered every year.**

*Offered Fall and Spring Semesters*

### **NS 900 — DIRECTED STUDY IN SOCIOLOGY/ANTHROPOLOGY**

Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon approved, student-professor contract.

## Spanish (See Foreign Languages)

## Student Development

### **ND 099 — FRESHMAN SEMINAR**

3 credits

The methodology used in this course represents a combination of teacher-prepared lectures, with student-centered, highly-participatory small and large group discussions. Using the text Master Student as a guide, students will engage in writing activities, quizzes, homework assignments and oral reports. In addition, videos and guest lectures will supplement and enhance the text. As a result of this course, the student will develop an understanding of institutional procedures, utilize basic study skill techniques, explore personal/social concerns, and develop career information and planning skills.

*Offered Fall and Spring Semesters*

### **ND 122, 123, 124 — CAREER PLANNING MODULES**

This three (3) credit course is divided into one-credit modules. This course will help students to assess their strengths, interests, and values, and to examine their lifestyle.

#### **ND 122 — SELF-ASSESSMENT — MODULE 1**

1 credit

This module involves understanding of who you are and what is important to you. Course projects include: career assessment inventories, values clarification, and personal assessment.

#### **ND 123 — CAREER EXPLORATION — MODULE 2**

1 credit

This module involves identifying some key interest; you are now ready to explore the world around you. Course projects include: guest speakers, informational interviews, and access to resources for job market investigation.

#### **ND 124 — CAREER DECISION — MODULE 3**

1 credit

This module involves making career decisions. Students will develop effective job campaign strategies which include: resume writing, applications/cover letters, and practicing interviewing on videotape.

*Offered Fall and Spring Semesters*

### **ND 126, 127 — STUDY SKILLS SEMINAR**

2 credits

This course, consisting of two modules of five weeks each, is designed to increase student success in college through exposure to efficient study techniques, personal learning styles,

## STUDENT DEVELOPMENT

and available campus resources. Through lecture, discussion, films, tapes, tours, and self-appraisal inventories, students will learn more about themselves: short and long range goals, self-motivation, anxiety reduction, planning and prioritizing time, study/test-taking skills. Students will also become familiar with the available resources, services, and procedures of the College. A student may register for one or both of the modules during the registration period. A student may register for ND 127 up to five weeks into the semester.

*Offered Fall and Spring Semesters*

### **ND 126 — STUDY SKILLS SEMINAR — MODULE 1**

1 credit

This module covers self-assessment, study habits and skills, time management and planning, scholastic motivation, learning styles, note-taking, thinking skills, and institutional resources at STCC.

### **NS 127 — STUDY SKILLS SEMINAR — MODULE 2**

1 credit

This module covers preparing for taking tests, memory and learning, library resources, term papers and writing skills, assertiveness to improve communication skills, self-confidence, anxiety and stress, and relaxation techniques.

## Surgical Technology

### **AO 101 — INTRODUCTION TO SURGICAL TECHNOLOGY**

4 credits

An introduction to surgical technology, selected aspects of the history of surgery and hospitals, terminology, sterilization, asepsis, universal precautions, and preparation of goods for sterilization are presented in class and simulated laboratory. Perioperative routines including understanding a health history; risk factors; informed consent; patients' rights; physical diagnosis skills; and scrubbing, gowning, and gloving are topics covered this semester. Field observations are planned in surgical processing departments in hospitals.

*Offered Fall Semester every other year*

### **AO 201 — SURGICAL TECHNOLOGY 1**

5 credits

Fundamentals of surgical patient care essential to the work in the surgical suite are presented in class, laboratory, and field experience in hospitals. Selected topics included are wound healing, environmental design and safety, care of specimens, preparing and functioning in a sterile field, instrument classification and recognition, needle and suture classification, draping, legal responsibilities, and skill acquisition in gowning and gloving. Roles of team members in the operating room are highlighted. Practice for skill acquisition, and instrument recognition and handling is expected, and the on-campus laboratory is open to students. **PREREQUISITES:** AO 101, MB 132.

*Offered Spring Semester every other year*

### **AO 304 — SURGICAL TECHNOLOGY 2**

9 credits

The knowledge, skills and professional behavior of a surgical technologist are developed in this course, which combines common health problems requiring surgical intervention, surgical procedures, interoperative complications, instrumentation supplies, aseptic and special techniques, etc. Surgery of the abdomen, genitourinary, operative obstetrics, gynecological surgery, cancer (breast) surgery, and interoperative medications are some of the topics presented. Clinical practicums are planned in the operating room and central processing service with direct supervision. Clinical is 20 hours per week. **PREREQUISITE:** AO 101, AO 201, MB 132, MB 232, LE 100, LE 200, and AA 111-112.

*Offered Fall Semester*

### **AO 403 — ROLE OF THE SURGICAL TECHNOLOGIST**

2 credits

Leadership dimensions of the surgical technologist as a technical professional are developed in this course. State-of-the-art issues and practice concerns emerging into the work world, assuring quality and competency, and professional leadership are some topics discussed. Students will prepare a clinical paper and presentation as well as a resume. **PREREQUISITE:** Completion of semesters 1-3. May be taken in last semester only.

*Offered Spring Semester*

## TELECOMMUNICATIONS TECHNOLOGY

### **AO 404-405 — SURGICAL TECHNOLOGY 3**

10 credits

A continuation of AO 304 with common health problems and surgical procedures in additional surgical specialties, i.e., orthopedic, thoracic, vascular, reconstructive plastic eye, and others. Clinical experience in the operating room provides an opportunity to develop skill in the full spectrum of the work. Planning for and carrying out cases independently as first and second "scrub", first assistant, circulator, and the overall work of the surgical services is expected. Clinical work will weave into class for discussion and information of state-of-the-art practice. Opportunity for an elective experience may be possible. Clinical is 24 hours per week. **PREREQUISITE:** Completion of semesters 1-3.

*Offered Spring Semester*

## Telecommunications Technology

### **GT 111 — FUNDAMENTALS OF TV WRITING**

4 credits

In this course, students learn the fundamental principles of writing for television, with a strong emphasis on news. The question of how TV writing differs from compositional writing is explored. In addition, there will be discussion of journalistic ethics and the challenges that newsrooms face today. Students are taught how to write for live, still picture, and for video. The traditional script cues for directors are also taught. Due to the amount of writing involved, students' overall writing ability should improve considerably.

*Offered Fall Semester*

### **GT 120 — VIDEO TECHNIQUES**

3 credits

An overview of the prime skills which video production utilizes, such as planning, writing, practicing, staging, camera handling, audio pickup, video switching, mixing, lighting, and editing. Each week a new one of these elements is presented in a lecture-demonstration, followed by practice sessions in the studio. Emphasis is placed on competency in operating the equipment, and efficiency in the use of time.

*Offered Fall Semester*

### **GT 130 — VIDEO PRODUCTION**

3 credits

During the first part of the semester, each student plans and directs a two-camera video demonstration of how-to-do some particular task, the subject being of their choice. In the second part of the semester, five student production crews are formed. Each crew produces a mini-documentary on a topic of current news interest, using electronic field production equipment for a major portion of the program.

*Offered Fall Semester*

### **GT 140 — INTRODUCTION TO MASS COMMUNICATION**

3 credits

In this course, the wide spectrum of communications, from the evolution of various media to the impact on today's society, is explored. This includes programming philosophies and practices, image shaping, the First Amendment, information gathering, the world views of citizens, and what influence the media has on politics, or politics on the media.

*Offered Fall Semester*

### **GT 210 — ADVANCED TV WRITING**

3 credits

This course is devoted to script writing for production, including news, public affairs, and corporate programming. As with the prerequisites, writing comprises most of this course.

*Offered Spring Semester*

### **GT 220 — TV PRODUCING AND DIRECTING**

3 credits

Emphasizes the functions of producers and directors who have the financial and creative responsibilities in production. Topics covered are: staging actions, marking scripts, placing cameras, directional decisions, uses of music and effects, video editing and dubbing, quality control, and post-production revision. Making accurate estimates of time and costs involved in video production is practiced. Four student crews each produce and direct a dramatic program designed by the instructor.

*Offered Spring Semester*



# TELECOMMUNICATIONS TECHNOLOGY

## **GT 230 — SPEAKING ON TV**

3 credits

Essentially a speech course, but geared to television presentation. The student learns not only how to communicate to an audience through the camera, but also proper and professional camera behavior. A variety of methods will be utilized to ensure student growth during the semester.

*Offered Spring Semester*

## **GT 240 — MASS MEDIA THEORY AND EFFECTS**

3 credits

This course explores the overall effects of the media on society and culture, and how society reacts to various aspects of the media. Students will have the opportunity to explore previously produced media (books, audio tapes), and offer their insights on society's reaction to them.

*Offered Spring Semester*

## **GT 310 — INFORMATIONAL VIDEO DESIGN**

3 credits

During this course, emphasis shifts from technology to audience psychology. Insights from advertising research are combined with those from the world of theatre to create program designs which, although instructional in purpose, are audience-appealing in form. Lab projects require use of chroma-key, ultra closeups, electronic paint-box graphics, and A/B roll editing. Honors component available.

## **GT 321 — TV JOURNALISM**

3 credits

The fundamentals in editing (assignment development and newscast production), writing and rewriting, and producing are stressed, as well as learning how to capture news with videotape. Reporting and interviewing exercises are offered. Through this course, students learn to compile information and collate, unearth evidence and appraise it, budget their time and energy, and develop an appreciation for accuracy. Students will also develop the ability to produce a full news program.

*Offered Fall Semester*

## **GT 331 — TV PRODUCTION PRACTICUM**

3 credits

This course is taken at WGBY-TV or any other broadcasting, cable, industrial, medical or educational TV center. Students work studio camera, learn to operate video tape machines, work on console board, learn to operate slide and film chain machines. The station's professional staff teaches this course.

*Offered Fall Semester*

## **GT 410 — INFORMATIONAL VIDEO PRODUCTION**

4 credits

Class meetings feature written notes which model proposed production phases, and frequent critiques of work in progress. This facilitates learning the technique of "improvement through successively better approximations." Students are encouraged to produce the video program for a real client in the Springfield area. Students each design and produce their own program, showcasing their abilities in a tape suitable for resume presentation.

## **GT 421 — TV NEWS PRODUCTION**

2 credits

This is a combination classroom/studio laboratory course where much time is devoted to hands-on advanced editorial techniques, further development of news production, and new informational programming. The class produces a real-time closed-circuit newscast/news magazine on a regular basis.

*Offered Spring Semester*

## **GT 431 — TV PRODUCTION PRACTICUM 2**

2 credits

Working as a production assistant on WGBY's regular TV shows, or working in a similar capacity at Channels 22 and 40, or any other broadcasting, cable, industrial, medical, or educational TV center.

*Offered Spring Semester*

## **GT 440 — ELECTRONIC MEDIA SYSTEMS**

3 credits

A dynamic overview of the electronic mass communications industry, with an emphasis on the central role of cable. Interactions of competing technologies, economics, and consumer

markets are explored, with a view to how media corporations operate. Major topics are: limitations of broadcasting, advantages of cable, federal regulations, copyright, satellite systems, fiber optics, high-definition TV, and optical storage.

### **Word Processing Management (See Office Administration)**

## Directories





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Boston

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President  
UST Leasing Corporation  
Boston

Armen Zildjian  
Framingham State College  
Student

# Administrative Directory

## *Administrative Offices*

President	Andrew M. Scibelli	16/233	3841
Exec. Vice President/Academic Affairs	John H. Dunn	16/223	3845
Vice Pres., Administration/CFO	Cheryl Groeneveld	16/205	3802
Vice Pres., Economic & Business Devel.	Thomas E. Holland	15/1st	3863
Vice Pres., Enroll. Mgmt./Student Aff.	Ray M. Di Pasquale	16/Adm.	3176
Vice Pres., Grants & Development	Gail E. Carberry	16/331	3842
Dean of Student Services	William M. Manzi	16/128	3454
Assistant to the President	James J. Dowd	16/231	3819
Asst. Vice Pres., Human Resources	Myra D. Smith	16/245	3833
Director of Computer Services	L. Douglas Walter	2/103	3350
Staff Asst./Sec. to the President	Gladys S. Hardy	16/233	3841

## *Deans of Academic Divisions*

Business	Donald Bready	2/215	3324
Engineering Technologies	John R. Warner	17/205	3501
General Studies/Developmental Education	Teresa Burr	27/206	3477
Health/Human Services	Mary E. O'Leary	20/202	3609
Humanities	Jewel Rentzschke	13/104	3655
Math, Sciences & Engineering	Jack Barocas	17/315	3322
Nursing	Eileen Neville	20/303	3505
Social Sciences	Carol Roberts	17/329	3351

## *Academic Affairs*

Asst. Vice Pres., Academic Affairs	Richard C. Parkin	16/337	3460
Director, Academic Computing	Robert Baraldi	2/237	3348
Director, AHEC	Edna Apostol	15/204	3897
Director, Bilingual Services	Beatrice Szlajen	16/148	3482
Director, Cont. Educ. Oper./Veterans Aff.	David Sarrette	15/1st	3869
Director, HCOP	Raymond Blair	20/108	3985
Director, Institutional Research	Lucie K. Lewis	16/317	3832
Director, Library Services	Tamson M. Ely	27/101	3302
Director, Special Academic Projects	Georgena Van Strat	16/324	3876
Reference Librarian	Barbara Wurtzel	27/121	3478
Audiovisual Librarian	Lynn Kleindienst	27/121	3484
Cataloger	Lynn Eaton	27/107	3486
Staff Asst. to Dir. of Title III	Anthony Glavin	16/325	3871
Industry/Educ. Partner. Coord.	Theresa Worthley	16/326	3696
Multi-Media Instruc. Dev. Specialist	Les Howles	17/210	3158
2+2/Tech. Prep./Specialist	Celeste Comeau	16/331	3160
Occupational Education Liaison	Patricia Crosby	16/335	3427
Staff Asst., GED & Testing Coordinator	Felicia Mazzuchelli	15/1st	3867

## *Administrative Services*

Assistant Vice Pres., Admin.	Tim Braim	16/203	3806
Director, Security & Safety	Francis Perusse	7	3800
Director, Facilities	Victor T. Focosi	16/203	3301
Staff Asst., Administrative Services	Alicia Haluch	16/203	3861

## *Computer Services*

Associate Director, Campus Network	Mark Curto	2/103	3915
Assistant Director, Admin. Computing	Ann Pandolfi	2/101	3377

## *Economic and Business Development*

Asst. Vice Pres., Economic & Bus. Dev.	Mary Breeding	15/1st	3865
Director, Conferences and Seminars	Ann Dunphy	15/1st	3824
Facilities Coord./Special Interest Courses	Richard Cohen	15/1st	3131

## *Enrollment Management Services/Public Relations*

Asst. Vice Pres., Enroll. Mgmt./Admissions	Patrick Tighe	16/Adm.	3822
Assistant Dean of Students	John A. D'Orazio	16/127	3883
Director, Athletics	J. Vincent Grassetti	2/G07	3929
Director, Coop. Educ./Career Place./Transfer	Louisa Davis	27/265	3807
Director, Counseling Center	Kent A. Goodchild	27/2nd	3816
Director, Financial Aid	Joel A. Friedman	16/285	3813
Director, Health Services	Patricia Burke	16/105	3510
Director, Publications/Media Relations	Setta A. McCabe	16/247	3830
Director, Student Activities	Michael Van Dyke	8	3828
Director, Women's Center	Jane Sweeney	20/100	3723
Registrar	Elaine Tlofi	15/1st	3857
Coordinator of Disabled Student Services	Mary A. Moriarty	27/2nd	3827
Associate Director, Financial Aid	Marilyn Sutin	16/285	3818
Associate Director, Financial Aid	Mary Forni	16/285	3817



Assistant Director, Admissions/Minority Enroll.  
Admissions Counselor

Harriett Goodman  
Christina Tigue

16/Adm.  
16/Adm.

3175  
3776

*Grants and Development*

Asst. Vice Pres., Grants and Development  
Executive Director, Foundation/Alumni

J. Stanley Cummings  
Beverly D. Simonds

16/331  
16/3rd

3880  
3873

## Department Chairs/Program Coordinators

Art	Edith Wiles	28/211	3754
Automotive Technology	Raymond Sbriscia	20/119	3958
Biological Sciences	Roberta Nichols	02/533	3534
Bio-Medical Instrumentation Technology	Kenneth Dupont	20/522	3508
Business Administration	John Godfrey	02/213A	3326
Chemistry	Elsa Cressotti-Bugbee	17/331	3345
Civil Engineering Technology	W. Lee Tuthill	17/302	3380
Clinical Laboratory Science	Joanne Cerrato	20/350	3516
Computer Information Systems/Data Proc.	Lillian Beauchemin	02/238	3328
Computer Systems Engineering Technology	G. Mullett/G. Snyder	17/635,631	3435/3433
Computer Science Transfer	Oliver Wallock	17/337	3356
Cosmetology	Marilyn Rovelli	20/416	3503
Court Reporting	Beverly McCarthy	02/214A	3545
Dental Assistant	Carol Giaquinto	20/203	3633
Dental Hygiene	Denise Ryan	20/240	3504
Developmental English	David Winsper	13/217	3674
Drafting Technology	Gary Masciadrelli	28/204	3752
Early Childhood Education	Sally Curtis	13/304	3658
Economics	Siegfried Rentzschke	17/239	3964
Electrical/Robotics Technology	Richard Sturtevant	20/120	3959
Electronic Systems Engineering Technology	G. Mullett/G. Snyder	17/635,631	3435/3433
Energy Systems Technology	Robert Bujak	32/103	3761
Engineering and Science Transfer	William White	17/309	3333
English	Jane Davis	13/213	3670
English as a Second Language	Marie Greco	13/302	3682
Environmental Technology	Daniel Smola	17/203	3657
Foreign Languages	Lourdes Delson	13/312	3654
Graphic Arts Technology	Raymond Fontaine	14/106	3769
History/Political Science	Cecelia Gross	17/241	3353
Human Services Associate	Richard Kasunick	20/426	3541
Landscape/Plant Science Technology	H. Alan Crowe	17/339	3357
Laser Electro-Optics Technology	G. Mullett/G. Snyder	17/635,631	3435/3433
Law Enforcement/Criminal Justice	Bert Scannapieco	17/225	3325
Liberal Arts Transfer	Mary Donovan	17/219	3327
Mathematics	L. Groeneveld/R. Burns	17/412,411	3397/3372
Mechanical Engineering Technology	Gary Masciadrelli	28/204	3752
Medical Assistant	Mary Ellen Harbeck	20/514	3551
Nuclear Medicine Technology	Richard Serino	20/207	3502
Office Administration	Linda Belton	02/214	3943
Physical Therapist Assistant	Elizabeth Burke	20/320	3539
Physics	H. Abbott/W. Mullett	17/305	3332
Psychology	Edward Moriarty	17/335	3355
Radiation Therapy Technology	Julianne Morrison	20/420	3525
Radiography	Richard Pushkin	20/424	3547
Respiratory Care	Lee Robinson	20/422	3526
Sociology/Anthropology	Mary Jane Pi-Sunyer	17/235	3346
Surgical Technology	Kathleen Flynn	20/344	3521
Telecommunications Technology	Kirk Smallman	02/718	3684

## Administration, Faculty, and Professional Staff

- \*Abbott, Hilton M., B.S., University of Vermont; M.S., Eastern Michigan University; Ed.D., University of Massachusetts; Physics.
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- \*Cressotti-Bugbee, Elsa M., B.A., American International College; M.S.T., American International College; Chemistry
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- Eaton, Lynn, B.A., Bridgewater State College; M.L.I.S., University of Rhode Island; Cataloger/Head of Technical Service, Library
- Ely, Tamson M., B.A., Goucher College; M.S., Simmons College; M.A., University of Massachusetts; Director of Library Services
- Farley, Carole, B.S., American International College; M.Ed., American International College; Office Administration
- Fitzgerald, Marie Andree, B.A., Trinity College; M.Ed., Cambridge College; CRI, National Court Reporters Association; Court Reporting
- Fleming, Marcia A., B.A., Northeastern University; M.S., Northeastern University; Clinical Laboratory Science
- \*Flynn, Kathleen T., Mercy School of Nursing; B.S.N., Boston College; M.S., Boston College; Clinical Fellowship, University of Rochester; Surgical Technology
- Focosi, Victor T., Director, Facilities
- \*Fontaine, Raymond, A.A., Holyoke Community College; B.A., University of Massachusetts; A.S., Springfield Technical Community College; Graphic Arts Technology
- Foote, Dorathea L., R.D.H., Forsyth School for Dental Hygienists; A.S., Northeastern University; B.S., University of North Carolina; M.Ed., University of Massachusetts; Dental Hygiene
- Forni, Mary A., B.A., American International College; M.Ed., University of Massachusetts; Associate Director of Financial Aid
- Fortier, Adelaida, B.S., New Hampshire College; Coordinator; R.E.A.C.H./Holyoke



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Friedman, Joel, B.A., Brooklyn College; M.A., Brooklyn College; Director of Financial Aid

Gallece, Diane, B.S.M.E., Union College; Mechanical Engineering Technology

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Gentile, Louis A., B.A., American International College; M.S., Springfield College; Ph.D., University of Maryland; Psychology

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Gibbs, William E., B.A., American International College; M.B.A., Western New England College; Graphic Arts Technology

Glavin, Anthony, A.B., Harvard College; M.A., Boston College; Staff Asst. to Director of Title III

\*Godfrey, John J., B.A., American International College; M.B.A., Western New England College; Business Administration

Goodchild, Kent Alan, B.S., University of Massachusetts; M.Ed., Springfield College; C.A.G.S., Springfield College; Director of Counseling

Goodman, Harriett, A.S., Springfield Technical Community College; M.Ed., Cambridge College; Assistant Director of Admissions/Minority Enrollment

Graham, Sandra, B.A., University of Massachusetts; M.S., University of Massachusetts; Early Childhood Education

Grassetti, Jack Vincent, B.S., Springfield College; Director of Athletics

\*Greco, Marie K., B.A., Queens College; M.S., Queens College; English as a Second Language

Greene, Pamela B., A.A., Mt. Ida Jr. College; B.A., Universidad de las Americas; M.A., University of Massachusetts; English as a Second Language

Gregorski, Mitchell, B.B.A., American International College; M.B.A., American International College; Business Administration

Groeneveld, Cheryl, B.A., University of Massachusetts; M.B.A., Western New England College; Vice President, Administration/CFO

\*Groeneveld, Leonard, B.A., Colgate University; M.S., University of Rhode Island; M.S., Florida State University; Mathematics

\*Gross, Cecelia, A.B., Howard University; M.A., Grinnell College; History, Political Science

Haddad, Zahi, A.S., Springfield Technical Community College; B.S., Western New England College; M.S.E.E., Worcester Polytechnic Institute; Engineering & Computer Science Transfer

Hall-Gibbons, Shelby, B.S., American International College; M.Ed., Springfield College; CAGS, Springfield College; Counselor

Haluch, Alicia, B.S.B.A., Western New England College; M.B.A., Western New England College; Staff Assistant, Administrative Services

Hammond-Jimenez, Jean, B.A., University of Massachusetts; M.Ed., University of Massachusetts; English as a Second Language

\*Harbeck, Mary Ellen, B.S., Nazareth College; M.S., American International College; Medical Assistant

Hardy, Gladys S., B.A., Springfield College; Staff Assistant/Secretary to the President

Harrington, Linda Shea, B.A., Our Lady of the Elms College; M.A., Westfield State College; English

Hebert, Daniel C., B.A., Western New England College; B.S.B.A., Western New England College; J.D., Western New England College; Member of Massachusetts Bar and Florida Bar; Law Enforcement/Criminal Justice

Herd, William B., A.S., Holyoke Community College; B.S., American International College; M.B.A., Western New England College; Business Administration

Hilton, Sharon, B.S.D.H., Old Dominion College; M.Ed., Westfield State College; Dental Hygiene

Holland, Thomas E., B.A., Fairfield University; M.A., University of Southern California; Ph.D., University of Southern California; Vice President, Economic and Business Development

Howles, Les, B.S., SUNY Brockport; B.A., Saint Edwards University; M.S., University of Oregon at Eugene; Multi-Media Instructional Development Specialist

Jagodowski, Richard, B.S.E.E., Western New England College; Electronic Systems Engineering Technology

Jimenez, Juan, B.S., University of Massachusetts; M.Ed., University of Massachusetts; D.Ed., University of Massachusetts; Mathematics, Biological Sciences, Special Services

Karnik, Arvind, B.S., University of Bombay; M.S., State University of New Jersey; Electronic Systems Engineering Technology

\*Kasunick, Richard, B.A., Worcester State College; M.Ed., Antioch University; Human Services Associate

Kerr, Virginia, B.A., University of Maryland; M.Ed., University of Vermont; Liberal Arts Transfer

Killeen Bennett, Mary, R.N., Springfield Hospital School of Nursing; B.S., Our Lady of the Elms College; M.S., Springfield College; Ed.D., University of Massachusetts; Social Sciences

King, Sandra, Cert., Springfield Technical Institute; A.A., Springfield Technical Community College; B.S., University of Massachusetts; M.Ed., Westfield State College; Respiratory Care

Kirby, Edwina K., A.S., Becker Junior College; B.S.B.A., American International College; M.Ed., University of Massachusetts; Office Administration

Kleindienst, D.Lynn, B.A., Westfield State College; M.L.I.S., University of Rhode Island; Audio-Visual Librarian

Korzec, Michael, A.S., Springfield Technical Community College; Staff Assistant, Computer Services

LaFrancis, John S., A.S., Springfield Technical Community College; B.S., Central Connecticut State University; M.Ed., Westfield State College; Mechanical Engineering Technology

LaMontagne, Clare F., A.S., Springfield Technical Community College; B.S.N., American International College; M.S., University of Connecticut; Nursing

Leslie, George J., A.B., Holy Cross College; M.S., University of Detroit; M.Ed., Westfield State College; Ed.D., University of Massachusetts; Biological Sciences

Lewis, Lucie, B.S., American International College; M.Ed., Springfield College; Director of Institutional Research

Lizotte, Elizabeth, A.S., Andover College; A.A., University of Maine; Staff Assistant/Computer Programmer

Lukas, Cheryl, B.F.A., Massachusetts College of Art; Graphic Arts Technology

Lukis, Kenneth M., B.A., St. Anselm's College; M.S., Holy Cross College; Ph.D., University of Pittsburgh; Chemistry

Luvera, Patricia, Mansfield Beauty Academy; Massachusetts license; Cosmetology

Magnier, Jean-Marie, B.S., Colgate University; M.S., University of Massachusetts; Mathematics

Manzi, William, B.A., American International College; M.A., Westfield State College; Dean of Student Services

Mariani, Teresa, B.S.N., St. Joseph's College; M.S.N., University of Massachusetts; Nursing

\*Masciadrelli, Gary, B.S., Western New England College; M.S.M.E., Rensselaer Polytechnic Institute; Mechanical Engineering Technology

Massa, Nicholas A., B.S., Western New England College; M.S., Western New England College; Electronic Systems Engineering Technology

Mathison, Carol, L.M.H.C., B.S., Russell Sage; M.S., Springfield College; Counselor/Generalist

Mayfield, Walter P., B.S., University of Alabama; M.S., Rensselaer Polytechnic Institute; English

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McDonald, James A., B.S., University of Massachusetts; M.S., American International College; Mathematics

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Michelman, Cherry, B.A., Smith College; A.M., Boston University; Ph.D., University of Massachusetts; Philosophy

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- Rillings, Kenneth, A.A.S., State University of New York; B.S., Hofstra University; M.S., University of Massachusetts; Ph.D., University of Massachusetts; Chemistry
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- Saletnik, Susan P., Certificate in Physical Therapy, Hahnemann Medical College and Hospital; B.A., Brandeis University; Physical Therapist Assistant
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- Shea, Patricia A., R.N., Misericordia Hospital; B.S., University of Dayton; M.S., University of Massachusetts; Nursing
- Shore, Stanley, B.S., Tufts University; Ph.D., University of Massachusetts; Chemistry
- Silvestri, Antonio, B.S.E.E., Western New England College; M.S.C.O.I.N.S., University of Massachusetts; Engineering and Science Transfer
- Simonds, Beverly Dwight, A.S., Bay Path College; B.B.A., University of Massachusetts; Executive Director, Foundation/Alumni
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- \*Smallman, Kirk, A.A., Pasadena City College; B.A., Antioch College; M.A., University of Southern California, Ph.D., University of Massachusetts; Telecommunications Technology
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- Spinetti, John P., B.S., University of Massachusetts; M.S., University of Massachusetts; Ed.D., University of Massachusetts; Mathematics/Chemistry



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- \*Sturtevant, Richard, A.S., Berkshire Community College; B.S., University of Massachusetts; M.Ed., Westfield State College; Electrical/Robotics Technology
- Sutin, Marilyn, B.A., Richmond College; M.Ed., Springfield College; Associate Director of Financial Aid
- Sweeney, Jane, A.A., Springfield Technical Community College; B.A., Mt. Holyoke College; Director of Women's Center
- Szlachetka, Carol, A.S., Springfield Technical Community College; B.S., Westfield State College; M.N.S., Worcester Polytechnic Institute; Dental Hygiene
- Szlajen, Beatrice, A.A., Havana Business College; M.Ed., University of Massachusetts; Director of Bilingual Services
- Tenerowicz, Michael, A.S., Holyoke Community College; B.S., American International College; M.B.A., American International College; Business Administration
- Tenczar, Julian, A.S., Springfield Technical Community College; Staff Assistant, Engineering Technologies
- Tetrault, Carolyn L., B.A., Emmanuel College; M.A., Boston College; English
- Therrien, Ernest R., B.A., University of Maine; M.A., Fordham University; Business Administration
- Thomes, Karen Polastry, A.A., Springfield Technical Community College; B.A., Smith College; Health Career Community
- Thompson, Teresina B., Dean Emeritus
- Tigue, Christina, B.S., Salem State College; M.S., Syracuse University; Admissions Counselor
- Tigue, Patrick, B.A., Framingham State College; M.S., Syracuse University; Ed.D., University of Massachusetts; Assistant Vice President, Enrollment Management/Admissions
- Tomkiel, Diane, Certificate, Springfield Technical Community College; certified by Massachusetts Board of Cosmetology; Cosmetology
- Trader, Sandra, B.A., University of Connecticut; Academic/Career Counselor, Student Support Services
- Trute, Alice Sullivan, R.N. Diploma, Hartford Hospital School of Nursing; B.S., American International College; M.Ed., Springfield College; Health Science/Medical Assistant
- Ttoli, Elaine, B.S., Central Connecticut State University; M.A., Central Connecticut State University; Registrar
- Tulloch, John W., B.S., University of Massachusetts; M.L.A., University of Michigan; Landscape/Plant Science Technology
- \*Tuthill, William L., B.S.C.E., Union College; M.B.A., University of Massachusetts; Licensed Professional Engineer, Civil Engineering Technology

Valcarcel, Ana, B.A., University of Puerto Rico; M.A., University of Puerto Rico; Biological Sciences

Van Dyke, Michael, B.A., Ithaca College; M.Ed., Springfield College; Director of Student Activities

Vangel, Peter, A.S., Springfield Technical Community College; B.S., University of Massachusetts; Laser Electro-Optics Technology

Van Strat, Georgena, B.A., Newark State College; M.Ed., University of Massachusetts; Ed.D., University of Massachusetts; Director of Special Academic Projects

Verville, Richard F., B.B.A., Western New England College; M.B.A., Western New England College; Cert., Harvard Business School; Business Administration

Wallock, Oliver F., B.S., University of Connecticut; M.S., University of Connecticut; Engineering & Science Transfer

Walter, L. Douglas, B.S.B.A., Western New England College; Director of Administrative Data Processing, Computer Services

Warner, John R., B.S.C.E., University of Massachusetts; M.B.A., Western New England College; Licensed Professional Engineer, Civil Engineering Technology; Dean, Division of Engineering Technologies

Weisner, Stephen G., A.A., Rockland Community College; B.A., Richmond College; M.A.T., University of Massachusetts; Ph.D., University of Massachusetts; Sociology

White, Gwendolyn B., B.A., Albertus Magnus College; M.S., Columbia University; English

White, Pamela, B.S., American International College; M.A., American International College; Job Developer, Cooperative Education/Career Services and Transfer Affairs

\*White, William R., B.S., University of Connecticut; M.S., Rensselaer Polytechnic Institute; Engineering and Science Transfer

\*Wiles, Edith, B.F.A., University of Massachusetts; M.A.T., University of Massachusetts; Art

\*Winsper, David, B.A., Vassar College; M.A.T., University of Massachusetts; Developmental English

Worthley, Theresa, B.A., American International College; M.A., American International College; Industry/Education Partnership Coordinator

Wurtzel, Barbara S., B.A., State University of New York; M.L.S., State University of New York; Reference Librarian

Yacovone, Vincent, A.A., Holyoke Community College; B.S., University of Massachusetts; M.A., University of Connecticut; C.A.G.S., University of Massachusetts; Director of Media Production Center

Yawin, Robert, B.S., Central Connecticut State College; M.A., Bowling Green State University; Ph.D., University of Connecticut; Mathematics

Zagarins, Juris, B.S., Tufts University; Mat. Eng., Massachusetts Institute of Technology; Engineering and Science Transfer

\*DEPARTMENT CHAIRPERSON

DIRECTORY INFORMATION AS OF JULY, 1993

## Part-time Faculty and Professional Staff

- Beauregard, Carole, R.R.T., Springfield Technical Community College; Respiratory Care
- Begley, Nan, M.A., Westfield State College; Psychology
- Bellucci, Debbie, M.B.A., Western New England College; Computer Information Systems/Data Processing
- Brunton, Dennis, Mathematics
- Carter, Paul, M.M., University of Massachusetts; Music
- Cebula, Eileen, M.S., University of Massachusetts; English
- Charkiewicz, Mitchell, B.S.M.E., Western New England College; Mathematics
- Crosby, Jane, B.A., Mt. Holyoke College; M.A., Duke University; J.D., SUNY/ Buffalo; Law Enforcement
- Darcy, Denise, A.S., Springfield Technical Community College; Dental Hygiene
- DeFlorio, Dara, D.M.D., Tufts University; Dental Hygiene
- Fortsch, John, B.S., Fitchburg State College; M.S.E., Springfield College; Computer Information Systems/Data Processing; Professor Emeritus
- Gagliarducci, Jean, B.S.N., Fitchburg State College; Nursing
- Goodman, Gary, D.M.D., Tufts Dental School; Dental Hygiene
- Jacapraro, Steven, D.M.D., New Jersey College of Dentistry, Dental Hygiene
- Johnson, Davis, B.A., St. Louis University; M.Ed., University of Massachusetts; English
- Johnson, Susan, A.D., Springfield Technical Community College; B.A., Siena College; Nursing
- Kennedy, Linda, B.A., University of Massachusetts; M.B.A., University of Massachusetts; Business
- Kopy, David, B.A., Westfield State College; M.B.A., Western New England College; Mathematics
- Korbut, Joyce, A.D., Springfield Technical Community College; B.S.N., Fitchburg State College; Nursing
- Mandell, Sherry, B.S.N., University of Pennsylvania; Nursing
- Mendez, Regina, B.A., Fairleigh Dickinson University; M.A., Fairleigh Dickinson University; M.A.T., Fairleigh Dickinson University; English as a Second Language
- Messier, Richard, C.R.R.T.; A.D., Springfield Technical Community College; Respiratory Care
- Meth, Bruce, A.B., Harvard University; M.D., NYU School of Medicine; Psychological Consultant, Counseling Center
- Miles, Marianne, M.M., University of Massachusetts, Music
- Nardi, Paul, D.D.S., Georgetown University School of Dentistry; Dental Hygiene
- O'Connor, Celeste, B.S.N., American International College; Nursing
- Ogulewicz, Mary, M.S., Westfield State College; Dental Hygiene
- Pascone, Daniel A., B.A., Harvard College; M.B.A., University of Massachusetts; Grants Manager
- Plourde, Susan, D.M.D., Tufts School of Dentistry; Dental Hygiene



Root, Stephen, D.D.S., Temple University School of Dentistry; Dental Hygiene  
Schiffman, Marc, M.F.A., University of Massachusetts; English  
Shriver, Deena, B.A., Trinity College; M.A., St. Louis University; Counselor for  
Learning Disabled, Counseling Center  
Skorupski, Janine, B.A., Elms College; M.A.T., Elms College; English as a  
Second Language  
Spencer, Karen, B.S., SUNY; Respiratory Care  
Szarlan, Ronald, D.D.S., Marquette University; Dental Hygiene  
Tarbell, Mary, B.S.N., American International College; Nursing  
Turcotte, Cliff, B.S.N., University of Massachusetts; Nursing  
Vassos, George, D.M.D., Tufts Dental School; Certificate in Periodontology,  
Harvard University/VA Program; Dental Hygiene

## Clinical Faculty-Health/Human Services

### CLINICAL LABORATORY SCIENCE

- Dirkes, Rita, M.T., (ASCP), B.A., Day Shift Supervisor, Providence Hospital
- Ely, Joseph, M.T., (ASCP), B.A., Administrative Director of the Laboratory, Noble Hospital
- Lakoma, Dorothy, M.T., (ASCP), S.C., M.S.T., Program Director — Education, Mercy Hospital
- Nemes, Margaret, M.T., (ASCP), B.A.; Laboratory Manager, Providence Hospital
- Patten, William, M.T., (ASCP), Director, Laboratory Education, Baystate Medical Center
- Poutre, Joan, M.T., (ASCP), B.S., Assistant Laboratory Manager, Holyoke Hospital
- Robitaille, Robert, M.T., (ASCP), M.S., Laboratory Manager, Memorial Square Laboratory
- St. Jean, Pamela, M.T., (ASCP), M.A., Lab Manager, Cooley Dickinson Hospital
- Sickler, Sherry, M.T., (ASCP), B.S., Supervisor, Laboratory Service, Veterans Administration Medical Center
- Sullivan, John, M.D., Clinical Director of Greater Springfield Pathology, Medical Advisor to CLS Program
- Surprenant, Glen, M.T., (ASCP), Laboratory Supervisor, Johnson Memorial Hospital

### DENTAL ASSISTANT

- Bucalo, Donald, D.D.S., Clinical Professor
- Bucalo, Lynn, D.D.S., Clinical Professor
- Coughlin, Kevin, D.D.S., Clinical Professor
- DeAngelis, Pasquale, D.M.D., Clinical Professor
- Deslauriers, Robert, D.D.S., Clinical Professor
- Girotti, William, D.D.S., Clinical Professor
- Hapcook, Charles, D.M.D., Clinical Professor
- Kirstein, Robert, D.M.D., Clinical Professor
- Leff, Robert, D.M.D., Clinical Professor
- Levanos, Constantinos, D.M.D., Clinical Professor
- L'Heureux, R., D.M.D., Clinical Professor
- Maslowski, James, D.M.D., Clinical Professor
- Megas, John Jr., D.M.D., Clinical Professor
- Quinn, Robert, D.D.S., Clinical Professor
- Quinn, Thomas, D.D.S., Clinical Professor
- Reen, David, D.M.D., Clinical Professor
- Reen, Thomas, D.M.D., Clinical Professor
- Sampson, Alan, D.M.D., Clinical Professor
- Sheehan, Robert, D.D.S., Clinical Professor
- Torchia, John, D.D.S., Clinical Professor
- Trombly, Kevin, D.D.S., Clinical Professor

Welch, Paul, D.M.D., Clinical Professor  
White, Richard, D.D.S., Clinical Professor  
Winn, Gerard, D.D.S., Clinical Professor

## **HUMAN SERVICES ASSOCIATE**

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Bernstein, Randall, Nutrition Program Director, WestMass Eldercare Inc.; Field Work Supervisor  
Beville, Verona, R.N., Director of Nursing, Elms Manor Nursing Home; Field Work Supervisor  
Bosh, Richard, Major, Administrator, Salvation Army, Citadel Corporation; Field Work Supervisor  
Calabrese, Joanne, Ed.D., Supervisor, Elementary Special Education, Springfield Public Schools; Field Work Coordinator  
Callahan, Mary, C.A.G.S., Supervisor, Elementary Special Education, Springfield Public Schools; Field Work Coordinator  
Chalmers, Priscilla L., M.B.A., Executive Director, Holyoke/Chicopee Regional Senior Services Inc.; Field Work Coordinator  
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Clark, Patricia, B.S., Executive Director, Greater Springfield Senior Services, Inc.; Field Work Coordinator  
Flecha, Jose, M.S.W., Psychotherapist, Gandara Mental Health Center; Field Work Supervisor  
Flink, Chuck, Director, Middle College High School; Field Work Coordinator/Supervisor  
Heap, Donna, B.S.W., Coordinator, Parent Aid Program, West Springfield Counseling Center, Inc.; Field Work Supervisor  
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Iennaeco, Shawn, Recreational Therapist, Day Treatment Director, Hawthorn Services Inc.; Field Work Supervisor  
Irizzary, Aurie, M.Ed., Program Director, Day Treatment Program, Gandara Mental Health Center; Field Work Coordinator/Supervisor  
Jenewin-Caplin, Mary, M.Ed., Director of First Call, Pioneer Valley United Way; Field Work Supervisor/Coordinator  
Lamlein, Pamela, Director of Volunteer Services, Brightside for Families and Children, Inc.; Field Work Coordinator  
Landers, June, R.N., Director, Mediplex East Longmeadow; Field Work Coordinator/Supervisor  
Misischia, Laurie, A.S./Gerontology, Director, Ombudsman Program, Greater Springfield Senior Services; Field Work Supervisor  
Prather, Philip, V.S., L.S.W., Social Worker, Pine Manor Nursing Home; Field Work Supervisor  
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Scott, Thelma, M.Ed., Director, Gandara/W.W. Johnson Life Center; Field Work Coordinator

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Yuen, Shuk, M.S.W., Day Treatment Director, Center for Human Development Community Re-Entry Program; Field Work Supervisor/Coordinator

Zippin, Al, C.A.G.S., Principal, Mill Pond School, Children's Study Home Inc.; Field Work Coordinator

### **MEDICAL ASSISTANT**

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Loftus, Joan, Clinical Supervisor, Medical Records, Medical West Chicopee

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Netti, Michael, Clinical Supervisor, EKG Department, Providence Hospital

Shaver, Ann, Supervisor, Pediatrics, Medical West Chicopee

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Zamorski, Mary, R.N., Supervisor, Medical West, Springfield

## **NUCLEAR MEDICINE TECHNOLOGY**

Cowell, Vernice, B.S., R.T.(N.), C.N.M.T., Technical Supervisor, Nuclear Medicine, Baystate Medical Center, Clinical Supervisor

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Upatham, Charuvuthi, M.D., Chief, Nuclear Medicine, Holyoke Hospital, Affiliate Medical Director

Zu'Bi, Said, M.D., Director, Nuclear Medicine, Baystate Medical Center, Program Medical Director

## **PHYSICAL THERAPIST ASSISTANT PROGRAM**

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Ditmar, Debra, P.T., Monson Developmental Center, Clinical Supervisor

Ditmar, Terry, P.T., New England Orthopedic Surgeons, Clinical Supervisor

Endorf, Mary Ann, P.T., Hartford Easter Seal, Clinical Supervisor

Gallant, Jody, P.T., Advanced Rehab, Clinical Supervisor

Hadley, Debra, P.T., Challenge PT Associates, Clinical Supervisor

Kaufman, Regina, P.T., Assistant Director, Spaulding Rehab Hospital; Clinical Coordinator

Kerbel, Lorna, P.T., Stewart Pediatric Clinic; Clinical Supervisor

LaCroix, Carol, P.T., Monson Developmental Center, Clinical Supervisor

LaVenture, Judy, P.T., Director, Harrington Hospital, Clinical Supervisor

Liana, Joyce, P.T., Rehab West, Clinical Supervisor

Lynch, Claire, P.T., Northampton Nursing Home, Clinical Supervisor  
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### **Index of Department Codes**

Each course number begins with the 2-letter prefix which is the department code. This index lists the department codes in alphabetical order.

### **Index of Course Subjects**

If you know you are looking for a course in a specific department, such as Graphic Arts Technology, you may use this index to find that the department code for Graphics Arts is GA, and that course descriptions for that department begin on page 222.

## **Index of Department Codes**

### **DEPARTMENT CODE**

### **DEPARTMENT**

AA	Medical Assistant
AC	Cosmetology
AD	Dental Assistant
AF	Occupational Therapy Assistant
AH	Dental Hygiene
AL	Clinical Laboratory Science
AM	Human Services Associate
AN	Nursing
AO	Surgical Technology
AP	Physical Therapist Assistant
AR	Respiratory Care
AS	Diagnostic Medical Sonography
AX	Radiography
AY	Radiation Therapy Technology
AZ	Nuclear Medicine Technology
BA	Accounting
BC	Court Reporting
BD	Computer Information Systems/Data Processing
BE	Executive Office Administration
BF	Finance
BI	Marketing
BK	Management
BL	Legal Office Administration
BM	Medical Office Administration
BO	Clerical Office Assistant
BP	General Business
BW	Word Processing Management
EB	Bio-Medical Instrumentation Technology
ED	Computer Systems Engineering Technology
EE	Electrical/Robotics Technology

EL	Laser Electro-Optics Technology
ET	Electronic Systems Engineering Technology
FA, FB	Mechanical Engineering Technology
GA	Graphic Arts Technology
GC	Civil Engineering Technology
GD	Drafting Technology
GL	Landscape/Plant Science Technology
GT	Telecommunications Technology
HE	Environmental Technology
HP	Energy Systems Technology
IA	Automotive Technology
LD	Developmental English
LE	English
LF	Foreign Languages
LM	Music
LS	General Studies
LT	Liberal Arts Transfer/Fine Arts Option
LX	Philosophy
MB	Biological Sciences
MC	Chemistry
ME	Engineering Sciences
MK	Computer Science Transfer
MM	Mathematics
MP	Physics
NC	Early Childhood Education
ND	Student Development
NE	Economics
NH	History
NI	Political Science
NL	Law Enforcement/Criminal Justice
NP	Psychology
NS	Sociology/Anthropology



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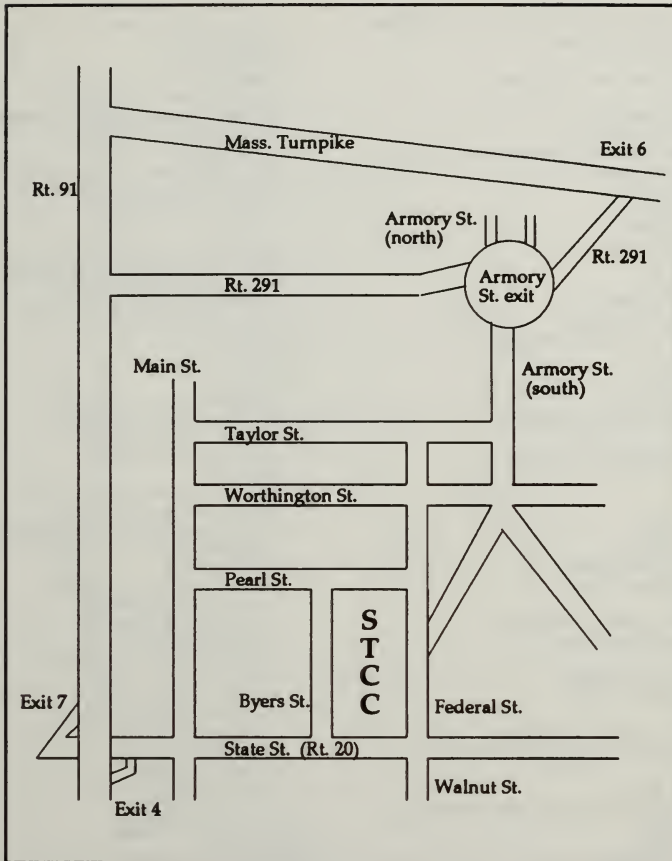


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## Directions to STCC



### From 91 going South:

Follow Hartford signs to Exit 7, Springfield Center, exit right. Go straight through lights. At second light, turn left under highway, onto State Street. Take State to Federal Street.

### From 91 going North:

Take Exit 4, Broad Street.  
Follow East Columbus Ave. to 3rd light, turn right on State Street.  
Take State to Federal Street.

### From Turnpike:

Take Exit 6.  
Turn left onto Rt. 291.  
Take Armory Street Exit. Go around rotary and take Armory Street going South.  
Stay on Armory Street until you come to Federal Street.

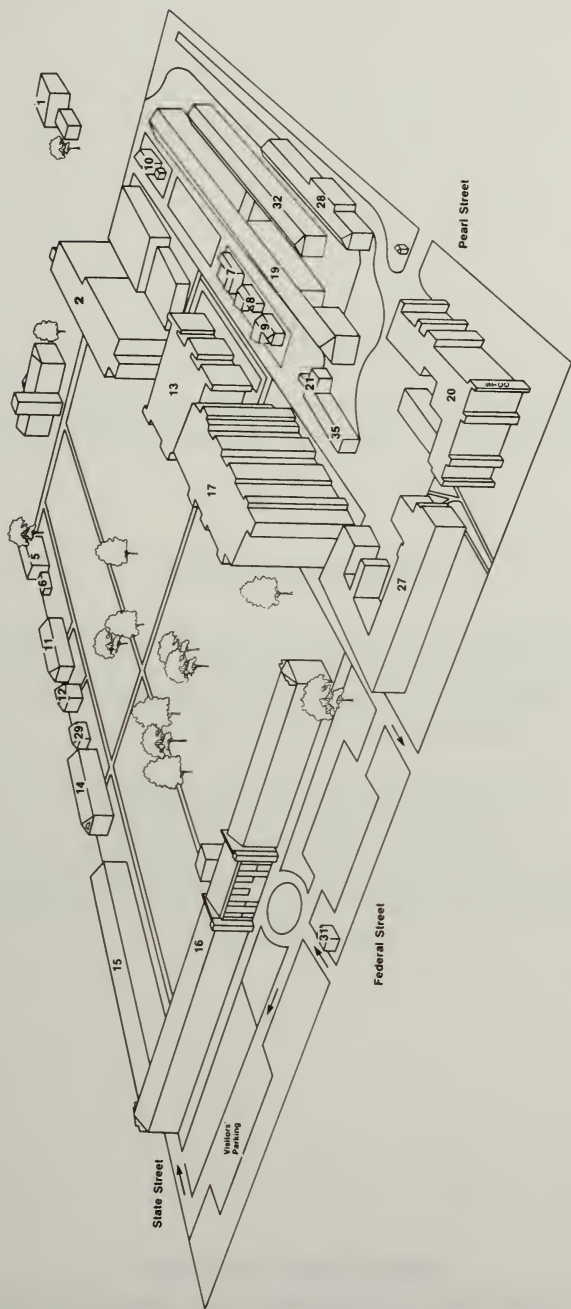
Campus security officers will direct you to appropriate parking area.



# Map Legend

- 1 Commanding Officer's Quarters, under jurisdiction of National Park Service
- 2 SCIBELLI HALL
  - Administrative Computer Center
  - Athletics
  - Biological Sciences
  - Business Administration
  - Computer Information Systems/Data Processing
  - Conference Center
  - Court Reporting
  - Exercise Room
  - Gallery Players
  - Gallery Snack Bar
  - Greenhouse
  - Gymnasium
  - Office Administration
  - Student Computer Labs
  - Telecommunications Technology
  - Theater
  - Weight Room
- 8 Student Activities
- Student Government Association
- 5 }  
6 } Under Jurisdiction  
10 } of STCC  
11 }  
12 }  
13 }  
12 Pottery Studio
- 13 DELISO HALL
  - Developmental English
  - Early Childhood Education
  - English
  - English As a Second Language
  - Media Production Center
  - Music
- 14 Graphic Arts Technology
- 15 GARVEY HALL SOUTH
  - Cashier
  - Division of Continuing Education
  - Pioneer Valley Area Health Education Center
  - Registrar
  - Veterans' Affairs
  - Western Massachusetts Center for Business and Technology
- 16 GARVEY HALL
  - Academic Affairs
  - Administrative Services
  - Admissions
  - Affirmative Action Office
  - Bilingual Services
  - Business Office
  - Enrollment Management
  - Financial Aid
  - Foundation
  - Health Services
  - Human Resources
  - President
  - REACH Program
  - Radio Station WTCC
  - Student Services
- University Without Walls
- Vending food area
- 17 PUTNAM HALL
  - Chemistry
  - Civil Engineering Technology
  - Computer Systems Engineering Technology
  - Computer Science Transfer
  - Economics
  - Electronic Systems Engineering Technology
  - Engineering and Science Transfer
  - Environmental Technology
  - History
  - Individualized Learning Center
  - Landscape/Plant Science Technology
  - Laser Electro-Optics Technology
  - Law Enforcement/Criminal Justice
  - Liberal Arts Transfer
  - Mathematics
  - Physics
  - Psychology
  - Ram Office
  - Sociology and Anthropology
- 20 ALLIED HEALTH BUILDING
  - Armory Square Day Care
  - Cafeteria
  - Bio-Medical Instrumentation Tech.
  - Clinical Laboratory Science
  - Cosmetology/Cosmetology Management
  - Dental Assistant
  - Dental Hygiene
  - Electrical/Robotics Technology
  - Health Careers Community
  - Human Services Associate
  - Medical Assistant
  - Nuclear Medicine Technology
  - Nursing
  - Physical Therapist Assistant
  - Radiation Therapy Technology
  - Radiography
  - Respiratory Care
  - Surgical Technology
  - Women's Center
- 21 Plant Growth Room
- 25 Automotive Technology
- 27 Art Gallery
  - Bookstore
  - Career Services
  - Cooperative Education
  - Counseling Center
  - General Studies
  - Library
  - Storekeeper and Maintenance Shops
  - Transfer Affairs
- 28 Art
  - Mechanical Engineering Technology
- 31 Gatehouse
- 32 Energy Systems Technology
- 35 Civil Engineering Lab
  - Plant Science Lab

# Campus Map



### **SMOKE-FREE BUILDINGS**

All buildings at Springfield Technical Community College are smoke-free. Designated sites for smoking are located outside all campus buildings.



## **Vision Statement**

Springfield Technical Community College will be  
a world-class, comprehensive educational institution.

## **Mission Statement**

Education contributes to the quality of life and living,  
and therefore the College employs the highest standards  
in the delivery of its unique and diversified  
programs and services to its customers.

The College assists individuals to develop  
the capacity for critical thinking;  
the ability to communicate effectively;  
an appreciation of the arts, sciences, and humanities;  
and an understanding of the technological nature  
of modern society.



SPRINGFIELD TECHNICAL COMMUNITY COLLEGE  
One Armory Square  
Springfield, Massachusetts 01105

*A member of the Cooperating Colleges of Greater Springfield*